FEEDSTUFFS

★ A WEEKLY NEWSPAPER ★

FOR THE FEED MANUFACTURER, JOBBER, BROKER and DEALER

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National Alfalfa Makes Offer to Buy Kansas Company

LAMAR, COLO.—The National Alfalfa Dehydrating & Milling Co. has offered to purchase all of the capital stock of Midland Industries of Independence, Kansas, provided at least 80% of the outstanding stock is deposited with the Citizens National Bank of Independence on or before Dec. 1, it was announced Nov. 14.

A joint statement issued by Henry A. Hofmann, president of National Alfalfa, and Rodger Johnson, president of Midland Industries, said that directors of both corporations have approved the action. Details of these transactions were not disclosed.

Mr. Johnson also stated that he and other substantial stockholders of Midland Industries, which operates the Elk Valley Mills are accepting the offer of National Alfalfa.

If the offer is accepted by more than the required number of stockholders, National Alfalfa will operate the company as a subsidiary.

A. R. McFadden, National vice president, said: "If this offer is accepted, the expansion will enable National to enlarge its market but, even more important, to increase our basic production and thus meet the increasing demand for higher quality dehydrated alfalfa products."

"These additional facilities will also enable us to better serve the important broiler growing sections of Texas and Arkansas."

No changes in management or personnel are planned, according to National officials. However, plans are already being formulated to expand the operations in southeastern Kansas as well as to increase inert gas storage and marketing facilities at Independence, Kansas. Approximately 2,000 tons of gas storage is now available at that point.

This expansion would give National a total of over 100 dehydrating plants in the U.S. and 112,000 tons of gas storage at eight locations.

Elmer Lenz Heads Allied Mills, Inc.

CHICAGO—Elmer W. Lenz, secretary and treasurer of Allied Mills, Inc., manufacturer of Wayne poultry and livestock feeds, was named president Nov. 14 in a special board of directors' meeting. He fills the post held since 1945 by Harold J. Buist, who died Nov. 8, following a heart attack suffered Nov. 6.

Also elected were Leo T. Murphy, chairman of the board, John J. Quinlan, executive vice president, and Lester M. Bolitho, secretary.

Mr. Buist's death was unexpected, as he had been in apparent good health prior to the attack. He helped organize Allied Mills, Inc., in 1929 and advanced through various executive posts to that of president on July 24, 1945, succeeding John B. DeHaven.

Mr. Lenz, 52, the new president, has been with Allied Mills for 29

(Turn to ELMER LENZ, page 102)

Burrus Feed Mills Announces Dog Food

FT. WORTH, TEXAS—Burrus Feed Mills, Ft. Worth, announced this week the introduction to the market of a newly-formulated dog food, according to Wesley Ballman and Charles Harris, co-managers of the mills.

Known as "Smacketts," the new, pelleted feed provides 26% protein and more than 6% fat.

Trading Suspended at K.C. Millfeed Futures Market

By MARTIN E. NEWELL
Feedstuffs Staff

KANSAS CITY—Changing trends in the feed business brought the 26-year-old millfeed futures market in Kansas City to a formal close Nov. 5, when directors of the Kansas City Board of Trade voted to accept a recommendation of the exchange millfeed committee to suspend trading in that commodity.

The formal suspension followed a period of about a month in which no trading was done, the last open commitment being liquidated on Oct. 11.

When the millfeed trading was initiated in 1931, there was a large volume of trading in millfeed for deferred delivery and it was felt that a futures market would be of substantial assistance to both buyers and sellers as a hedging medium. Flour millers, feed manufacturers and jobbers all joined in creating the market, which served very effectively in eliminating the great speculative hazards that accompanied millfeed trading.

At that time jobbers provided the major market for surplus millfeeds during the heavy flour production months and the summer-time period of low consumption, but rapid price changes often brought financial ruin to these traders. Futures offered hedging protection.

Volume of the new market quickly rose to substantial levels and trading continued active in every year until price control laws curbed the market during World War II. Trading dropped nearly to zero in 1944 to 1946, but rose rapidly after the removal of price ceilings and reached the all time high in 1948, when 803,460 tons were traded.

Fades After 1954

The market continued very active in 1954, but faded rapidly after that time. By 1956, trading had dropped to 40,095 tons for the year. The total was only 13,410 tons in the first ten months of 1957.

Last June the millfeed committee recommended closing the market, but flour milling interests asked that it be kept open and promised to help support the market by more active participation.

Millers were anxious to continue the operation because of the common ground of information provided in the quotations of millfeed values for future months. However, more active support by milling interests did not prove practical and the effort to maintain the market failed.

The exchange continues to post a consensus of members on cash feed prices each day.

While there are a number of fac-

(Turn to MILLFEED FUTURES, page 99)

Feed Supplies Show New Increase: USDA

WASHINGTON — Feed supplies generally showed new increases in the Nov. 1 Crop Production Report of the U.S. Department of Agriculture.

In addition to estimating 1% increases in corn and soybeans over the Oct. 1 report, and a 2% jump in the estimated production of grain sorghums, crop officials called 1957 a "great forage year." On Nov. 1 the hay and forage supply was the largest since 1942, they said.

"Western cattle and sheep, living high on good grass, show the best November condition since 1945," the report said. "Here, as in the main feed grain areas, demand is keen for light livestock ready to turn forage and grain into steaks and chops." (See table on page 99.)

Soybean and grain sorghum estimates were already at record levels before the Nov. 1 increases, and the boost in the estimate for corn helped secure that crop as the third largest of record.

Counting corn and grain sorghums with the average oats crop and large barley crop already in bins, the total feed grain supply is estimated at 140 million tons, 4% higher than the record year, 1948, and 8% more than last year.

The feed grain index measuring total production is at 119—three points above the standout corn year, 1948.

A much larger part of both corn and sorghum grain was still in the field Nov. 1 than last year or usual for the date, however. Iowa corn was still three fourths unpicked, Minnesota and Nebraska about four fifths, and Missouri and Kansas about half. Sorghum grain was about three fourths unharvested.

The big forage supply is the result of "good pastures, bulking hay stores and ample supplementary forage," according to the report. By Nov. 1, pasture feed condition had staged an unusual late gain over the previous month and far excelled last year and the average showing for Nov. 1. Hay crops made good cuttings in many sections and piled up a record total tonnage which is well distributed and is heavy in alfalfa.

By crops, the breakdown looks like this:

CORN: Production of all corn is forecast at 3,333 million bushels—up 1% over October, 7% above average, and 3% below last year. The national

(Turn to FEED SUPPLIES, page 99)

FEEDSTUFFS *Features This Week*

FEED INDUSTRY PROGRESS: A report on farm changes, credit, government controls, integration, pelleting and other factors affecting the feed industry begins on page 42.

FEED SERVICE REMUNERATION: Beginning on page 50 is an article analyzing various services to feed customers and how to pay for them.

TRAVELING STORE: How a traveling feed store does business in Wisconsin is outlined in an article starting on page 88.

FEED PRODUCTION: The annual Midwest Feed Production School, being held Nov. 20-22 in Kansas City, focuses special attention on developments in the manufacture and handling of feed. (The illustration at the left is explained on page 6.) This year the school is giving particular emphasis to materials handling. In line with this attention to feed production and the need for greater mill efficiency and lower costs, this issue of Feedstuffs includes some special production features. These articles deal with feed handling and also with other important phases of feed milling. The subjects and page numbers are:

High-Fat Pellets	10 and 14	Handling Sacked Feed	28
Bulk Stations	18	Determining Bulk Inventory	40
Feed Proportioning	22	Economics of Warehousing	76

Chickasha Buys Market Chain

CHICKASHA, OKLA. — Chickasha Cotton Oil Co. has purchased 18 Pratt supermarkets located in Oklahoma and Texas, it was announced this week by John Ferguson, chairman of the board.

Paul R. Ray, vice president and assistant to the president, said the purchase is a further step in the diversification of the company and allows the Save Way Feed division to channel its egg program into Pratt egg buying stations. A further announcement will be made at a later date as to how the merchandising programs of the feed division and stores division will be arranged.

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Do It Yourself

THE nation's largest livestock markets can price themselves right out of existence, a University of Missouri economist, Elmer R. Kiehl, recently warned a group of livestock market men who were attending a clinic in Manhattan, Kansas.

Just as some tradesmen have forced the average homeowner to do many of his own repairs by raising service charges without added efficiency, and brought about their own economic crisis, the economist could see the day when buyers and producers deal out the market man to save the costs, he said.

The "do-it-yourself" trend, already started, can be headed off, he said, only if markets improve their efficiency and increase their services and do it so cheaply that producers and buyers cannot afford to be without professional selling services.

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THIS thinking, as reported in a news release from Kansas State College, relates to some of the changes in farm marketing which are developing as part of the over-all "farm revolution." As farms become larger and more specialized, and as contract and integrated operations develop, there appears to be a tendency toward more buying arrangements that by-pass usual central market channels.

Such arrangements, which can assure steadiness of supply, desired grades and other elements needed in a streamlined processing operation, also offer something to the producer in the way of an assured market and return for his product.

Farm commodities other than livestock are being purchased in this manner. For some of them it is a new procedure, as in egg programs. For others, such as broilers, large portions of the production have for some time moved to distributors without first channeling through a "cash market" setup.

Somewhat in the same category, too, is the increased movement of grain from producing points directly to processors without a stop-off at a terminal market. Large-scale trucking and barge operations, encouraged by high rail rates, have been a major factor in this development. Some people have speculated on the possibility that grain processors may soon be contracting with farmers for their crops, much as canners contract with pea-growers. Perhaps this is already being done.

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IT may be far-fetched to even speculate on the possibility that terminal or central price-making markets may someday fail to reflect accurate market levels because of reduced volume. But suppose it should happen? Would it not pose a riddle? What would become of marketing arrangements that are made on the basis of prices over a given central market price? How would a seller, or a buyer, know what kind of a deal he was making? How would this affect hedging of grain transactions?

There are answers, no doubt, or answers will be found if necessary. Meanwhile, some hard thinking about the future of the free market system of arriving at prices in open trading seems to be in order. It is possible that too much "do-it-yourself" could produce some blown fuses as a result of short circuits in the commodity pricing structure.

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Partnership with Agriculture

THE observance of Farm-City Week, starting on Nov. 22, provides a splendid opportunity for calling the attention of city-dwellers and farmers alike to the dependence each has on the enterprise and well-being of the other. Businessmen engaged directly in dealing with farmers, as feed men do, hardly need to be reminded that the success of farm enterprises very much determine the success of their own operations. It is, in fact, their job to offer all the help that they can in the form of services and products in order to help farmers produce more efficiently and profitably.

On the other hand, many citizens who are much further removed from direct contact with farmers are only remotely aware of the contributions agriculture and the industries closely associated with it make to their well-being. Getting the attention of these people during Farm-City Week would be a major achievement indeed.

Commenting recently on this special week, True D. Morse, under secretary of agriculture, reiterated the fact that there has been more farm progress in the past 50 years than in all prior recorded history. "The terrific surge forward will continue," he said. "The diets of American people were never before at such a high level—and they are able to buy this excellent food with less hours of labor."

The changes in farming which have brought about abundance of production result from a partnership of industry and agriculture. While efforts are being made to make the nation at large better acquainted with this fact, feed men can make the official Farm-City Week the start of a year-long series of weeks with the purpose of making that partnership stronger.

A FEEDSTUFFS FORMULA FEEDS: HOW'S BUSINESS? FEATURE

A large supply of feed grains, the best grazing conditions in many years, much-delayed fall farm work which demanded so much of the feeders' time and a hand-to-mouth feeding situation prevented the formula feed business from setting any sales records. However, business was not exactly slow either and most plants were able to operate at normal capacities. Bright spots were the pickup in dairy feeds and the beginning of a better movement in hog fattening feeds. Egg prices continued fairly strong, hogs at Chicago brought $18 cwt. for butchers, the highest price in a month and cattle and lambs were steady to strong in price. Molasses continued on its steady downward price trend, millfeeds were again weaker and meat proteins were lower. The index number of feedstuff prices declined .6 point to 72 points compared with 81.8 points a year earlier. The feed grain index was down 1.3 points to 64.9 as against 77.4 a year ago. The hog-corn ratio, based on Chicago prices for the week ended Nov. 9 was 14.6, .4 point above the previous week and 3.2 points above the year before. (Feed ingredient details on pages 100-102.)

Northwest

After disappointingly slow business during the early part of the week, the feed business picked up considerably beginning Nov. 13. However, the pickup came too late to put tonnage ahead of the same week last year in some cases.

The increase in dairy feed demand caused the spurt. Hog fattening feeds also were doing quite well later in the week. A combination of events—cooler, rainy weather and depleted farm and dealer stocks of feeds—was thought to be factors in the pickup.

One feed man observed that feed dealers have been stocking feed mainly on an "as-needed" basis and that their warehouses are nearly empty. For this reason, he says, he is optimistic about a good pickup soon in formula feed demand.

All in all, the feed plants were not doing too badly, and most were running two shifts, full time. In one case, the day shift was putting in nine hours. Orders were coming nicely toward the end of the week and it appeared that next week would be a fairly busy one for feed plants.

Feed prices were lower about 50¢ ton as millfeeds, molasses and meat proteins dropped in price.

Southwest

Feed mill sales departments rated new business only fair to slow this week in the Southwest. Most mills had more trouble getting a five-day run than in the previous week and some six-day operations were cut back to five.

Part of the decline could be attributed to a tapering off in turkey feed production, which decline was not offset by increases of comparable size in other feeds. Some plants noted a minor pickup in cattle feed sales, but did not describe the volume as really heavy. Hog supplement has been an off-again-on-again item this fall and the variations from week to week and mill to mill have been hard to follow. In general, there has been a fair business and in one or two areas trade was brisk this week, but for the most part the current volume is disappointing.

Prices showed no change on most cards this week and were a bit lower in a few cases. The lack of strength in prices and the rather heavy grain supplies in the nearby areas probably were the major influences in dampening new business.

California

There was little enthusiasm apparent in the formula feed business during the last week. Prices remained about the same as the previous week and production and sales were geared mainly to laying feeds. Turkey feeds were selling at a very slow pace as the bulk of the birds had been marketed. Eggs were steady to firm with an improved demand for large sizes. Turkey prices on young toms showed no improvement but young hens were firm at 22½¢ to 24¢. Ice packed fryers were easier at 28½¢ to 30¢.

Weather and pasture conditions remained very favorable and these conditions combined with practically unlimited supplies of grains and feed ingredients gave no encouragement to processors to extend inventories. This kept merchandising at a low level and competition remained very keen.

Southeast

The feed business and feed mill running time were about unchanged in the southeastern states this week. Baby chick placements in the north Georgia broiler producing area for the last reporting period were about unchanged and remained relatively high.

Broiler prices during the week advanced about 1¢ lb. and were 16¢ lb. f.o.b. farms for finished broilers. The general consensus is that as long as a no loss guarantee form of contract is used, baby chick placements will remain at a high level.

Deliveries of feed ingredients in the area were running behind and have caused a rather serious problem with purchasing agents. This was due primarily to slow movement of trucks into the southeastern states, which normally this time of year are hauling considerable feed ingredients. Based on most reports, this condition will clear up in the very near future.

Some ingredient plants were in need of instructions and feed mills were reported to be running on a rather close floor inventory.

According to most reports, a minimum of forward buying has been

(Turn to MARKETS, page 104)

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J. Thomas Haigh

J. Thomas Haigh, Strong-Scott, Dies

MINNEAPOLIS—J. Thomas Haigh, 40, vice president and director of marketing for the Strong-Scott Mfg. Co., died following a heart attack at his home Nov. 11.

Mr. Haigh had been associated with the chemical processing industries for many years. Prior to joining Strong-Scott in 1956, he served as sales director for the mechanical division of Pillsbury Mills, Inc., and with the Schutz-O'Neill Co.

Mr. Haigh is survived by his wife, Lois, and four children, J. Thomas, Jr., Sally Elizabeth, James Daniel and Michael Dennis.

Wet Weather Places S. W. Grain Sorghum Crop in Jeopardy

LAMESA, TEXAS—A large part of the western Texas grain sorghum crop is in danger of being ruined by wet weather. Throughout western Texas and in part of eastern New Mexico, the maize and hegari are ready for harvesting, but the weather has been damp and foggy for the last two weeks. The grain is wet and the fields are muddy.

In Dawson County alone a 200,000-acre crop is only about 20% harvested, according to Leroy Colgan, county agricultural agent.

"We've got a $4 million crop in the county," said Mr. Colgan, "but it will be a race of combines against inclement weather."

Johnny Clark, Lamesa grain dealer, estimates the yield at 1,500 lb. per acre, if it can be harvested. He says that some farmers have already lost from 200 to 400 lb. per acre, because the stalks are leaning too much for combines to reach them.

"I believe it will require three weeks of dry weather for the combines to get the grain in," Mr. Clark said. "If we get a hard wind, a lot of it will be on the ground."

Mr. Colgan estimates that 20% of the county's grain sorghum acreage is in hybrid grains. The fields already harvested have produced from 15 to 30% more than standard varieties.

Reports from other counties also reveal a dismal picture concerning the weather. Byron Fancy, grain farmer of Lea County, New Mexico, says his grain sorghum stalks are leaning at a sharp angle, while the fields are muddy.

"I don't see how I can possibly get it harvested, even if the weather turns dry," said Mr. Fancy.

Mr. Fancy also reports a storage shortage in his area. The elevators have been taking wet grain and then drying it. However, the storage bins are full and most farmers have no place to put their maize except on wet ground.

10% Sales Gain for Purina Indicated

ST. LOUIS — A 10% increase in sales during the year ended Sept. 30 over the $393,722,101 in fiscal 1956 was reported by Raymond E. Rowland, president, Ralston Purina Co. Earnings were approximately the same, Mr. Rowland said.

In fiscal year 1956 Purina earned $14,265,814, or $2.25 a share, adjusted for a five-for-one stock split in January, 1957.

A factor contributing to optimism for the future was the initial reception of the company's new high fat pellet broiler feed. Company officials said that the new formula reduces the amount of feed required to produce 1 lb. of broiler by 15% to 20% and thereby reduces the break-even point on broiler production by one or two cents a pound below a year ago. It is reported that the feed has resulted in a 10% tonnage gain in broiler feed sales during October and that broiler feed sales in the Delmarva area grew by 40% during the month. By Jan. 1 it is expected that all of Purina's outlets will be carrying the new feed.

The over-all increase in the company's sales without a corresponding increase in profits "shows the impact of lower broiler prices," said Mr. Rowland.

Mr. Rowland said that broiler prices, however, had not gone as low as some had expected and that the industry's curtailment program had been successful.

A 15% growth in his firm's sales in 1958 is anticipated by Mr. Rowland as well as higher profits, barring any downtrend in agricultural prices, which, he felt, are pretty well at the low point.

QUICK DELIVERY PROMISED FOR CONTROL BOOK

CHICAGO — The American Feed Manufacturers Assn. office here has announced that it will accept orders from members for the 1958 Official Publication of the Association of American Feed Control Officials. As soon as the publication is off the press about Dec. 1, orders received by AFMA before Nov. 25 will be mailed via first class postage by an AFMA employee from the print shop, thus speeding up delivery. The added cost of this service to members will be assumed by AFMA. The Official Publication, which costs $5 per copy, can be ordered from AFMA at 53 West Jackson Blvd., Chicago 4, Ill. Checks may be made payable to AFMA.

F. T. Heffelfinger, Sr., Suffers Broken Thigh

MINNEAPOLIS—Frank T. Heffelfinger, Sr., 88, chairman of the board of F. H. Peavey & Co., is in Northwestern Hospital, Minneapolis, recuperating from a broken thigh suffered in a fall. His condition is reported to be satisfactory.

NEW STORAGE BUILDING

LIBERAL, KANSAS—Construction is under way at the Pittman Grain Co. here on a steel and concrete building which will provide 207,000 bu. of additional storage space. To be constructed at a cost of about $60,000, the building will measure 52 ft. by 162 ft. The building is to be completed by Nov. 30.

Delmarva Broiler Prices Steady as Marketings Rise

SALISBURY, MD.—Broiler prices in the Delmarva area held steady last week as 23% more birds went to market compared with the previous week and 11% more than a year ago.

Growers received an average of 16.70¢ lb. on the farm last week, according to the Maryland-Delaware Crop Reporting Service. The week before the average price was 16.69¢.

From the looks of the national situation, the hatcheries are settling down from their year-long overproduction. For 22 reporting states, hatcherymen set 32,255,000 eggs during the week of Nov. 9. This was 2% less than the previous week and 6% above the corresponding week a year ago.

Growers in 22 states placed 24,131,000 broiler chicks last week. This was 3% more than the previous week and 10% above the corresponding week a year ago.

Delmarva growers started 3,140,000 chicks last week. This was 4% more than a week earlier and 15% above the corresponding week of last year. The number of broilers was up 2% in Delaware and up 32% in Maryland, compared to the same week a year ago. Delmarva hatcherymen set 4,088,000 eggs. This was 1% more than the previous week and 20% above the same week of 1956.

The average price paid last week for 20% broiler mash was $95.24 ton. It was only 12¢ cheaper than the week before. With broiler meat prices and feed prices remaining the same for the past two weeks, the meat-feed ratio remained the same. A pound of broiler meat would buy 3.5 lb. of feed each week.

Hatcherymen based their price for hatching eggs on the following markets: f.o.b. Boston, special large brown, Nov. 7, 54-57¢, Nov. 12, 54-57¢.

Pullet Numbers Down 15%; All Regions Show Decrease

WASHINGTON — Evidence that egg prices probably will remain strong is seen in the U.S. Department of Agriculture's Nov. 1 report on the nation's laying flock.

The USDA crop report shows that pullets not of laying age on Nov. 1 totaled about 49.8 million—down 15% from a year ago and 44% from the 10-year average. Holdings in all regions of the country showed a decrease.

Decreases were 22% in the south central states, 19% in both the east north central and west north central, 9% in the north Atlantic, 8% in the south Atlantic and 5% in the West.

The number of layers in production was 314 million Nov. 1, a decrease of 5% from Nov. 1 of last year. South Atlantic states increased their numbers by about 2% while western states had about the same number as last year, and the other sections of the country showed a decrease.

The report said that a larger than usual percentage of old layers are in the laying flock this year, a fact made evident by a lower rate of lay during the month of October. Rate of production per layer was 14.8 eggs, compared with 14.9 last year and a 10-year average of 12 eggs.

Flocks laid 4,597 million eggs during October, 5% less than in October of last year. Decreases were 9% in the north Atlantic and east north central states, and 6% in the west north central and south central states. These were partially offset by increases of 2% in the south Atlantic and western states.

Potential layers—hens and pullets of laying age plus pullets not of laying age—amounted to about 364 million on Nov. 1. This is a decrease of 7% from a year ago. Numbers were down from last year in all sections of the country but the south Atlantic states where potential layers were about the same as a year ago. Decreases from a year ago were 9% in the north Atlantic and west north central, 8% in the east north central and south central and 1% in the west.

Prices received by farmers in mid-October averaged 43¢ compared with 38.1¢ in mid-October a year ago and 40¢ in September. During the last half of October the wholesale price for grade A large eggs turned down sharply at the principal egg markets in the East and Midwest. On the West Coast, however, prices for large eggs were relatively unchanged during the last half of the month.

Farmers received an average of 15.8¢ lb. live weight for chickens (farm chickens and commercial broilers) in mid-October compared with 16¢ a year earlier and 17.2¢ in September. Farm chickens averaged 12.7¢ lb. and commercial broilers averaged 17.2¢, compared with 13.1¢ and 17.2¢, respectively, in October last year.

Hens and Pullets of Laying Age, Pullets Not of Laying Age, Potential Layers on Farms

Year—	North Atlantic	E. North Central	W. North Central	South Atlantic	South Central	Western	United States
Hens and Pullets of Laying Age on Farms, Nov. 1 (thousands)							
1946-55 (average)	56,911	68,476	95,081	32,894	57,863	35,469	346,695
1956	60,462	65,789	90,341	32,010	46,744	36,569	331,915
1957	55,105	61,809	83,842	32,708	44,417	36,602	314,483
Pullets Not of Laying Age on Farms, Nov. 1 (thousands)							
1946-55 (average)	12,046	15,724	20,728	9,021	15,974	7,250	88,744
1956	8,823	8,922	17,927	6,497	9,389	7,138	58,766
1957	8,021	7,297	14,438	5,970	7,323	6,781	49,830
Potential Layers on Farms, Nov. 1* (thousands)							
1946-55 (average)	68,958	84,201	123,809	41,915	73,837	42,719	435,438
1956	69,285	74,781	108,268	38,507	56,133	43,707	390,681
1957	63,126	69,106	98,280	38,678	51,740	43,383	364,313

*Hens and pullets of laying age plus pullets not of laying age.

International Milling Feed Shipments Rise

MINNEAPOLIS—The International Milling Co., Minneapolis, earned a net profit of $4,861,804 in the fiscal year ended Aug. 31. This compares with $4,277,825 in 1956.

Due in part to the acquisition of Sargent & Co., Des Moines, toward the end of the previous year, formula feed shipments showed a marked increase, it was stated by Charles Ritz, chairman of the board, and Atherton Bean, president, in a joint letter prefacing the annual report.

Improvements were made at a number of flour mills as the firm's modernization program continued.

Last June the company made a long-term, unsecured loan of $5 million. "The money is being used to expand and improve our present facilities, and to serve our customers better," the letter said.

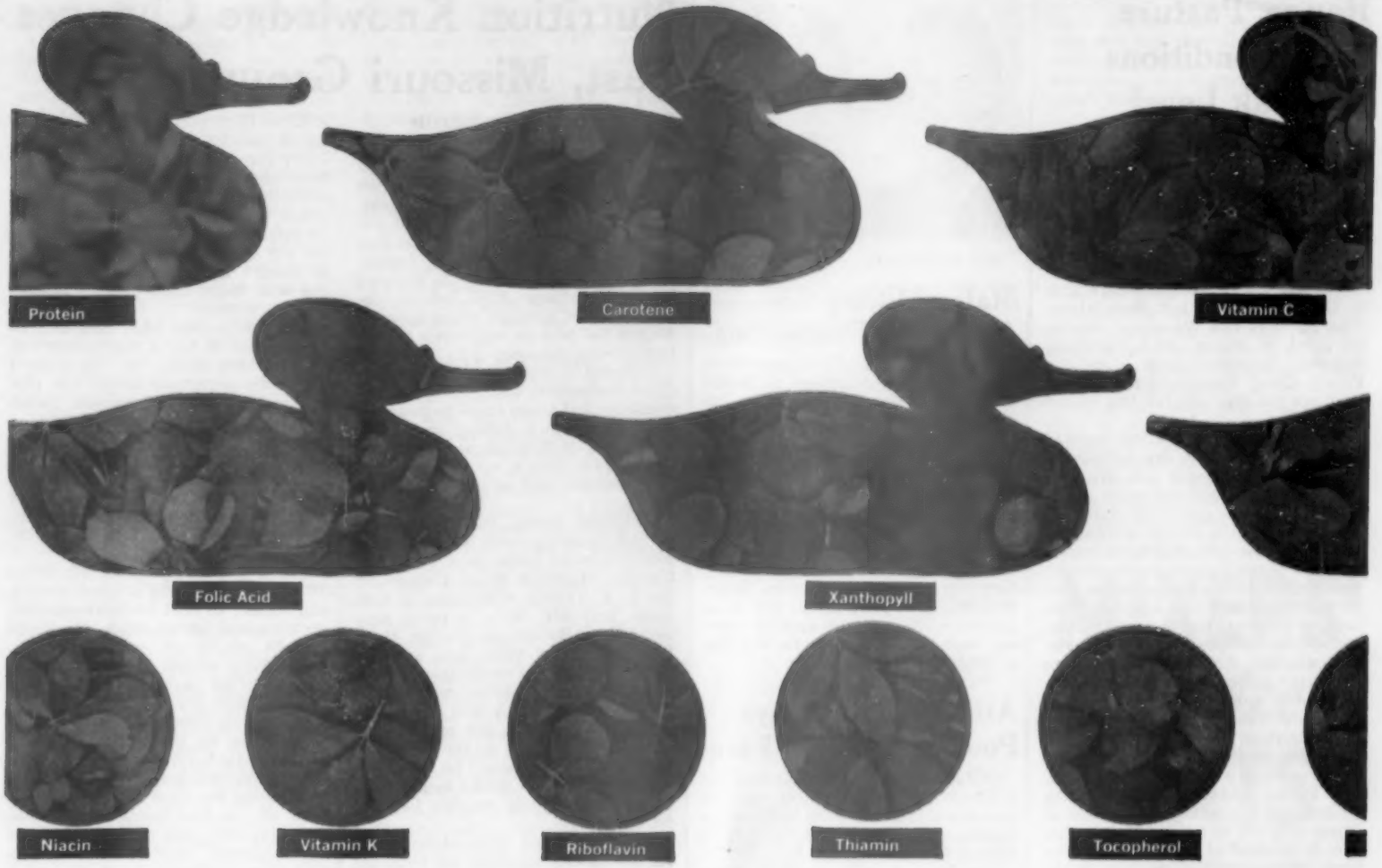
During the fiscal year, International increased its current assets from $59,617,984 to $61,501,390 and its working capital from $34,142,213 to $38,362,171.

This was the 65th year of operation by the company which operates 22 flour mills, four terminal elevators, and two shipping docks in the U.S. and Canada. It also operates eight Supersweet feed plants in Minnesota, Iowa, Illinois, Nebraska and Kansas.

OPENS FEED STORE

COUNCIL GROVE, KANSAS — Gene Jones, Emporia feed and cattleman, has opened a new feed store here.

MANEY BROS. MILL & ELEV. CO.
Minneapolis, Minnesota
Distributors in the Upper Midwest States for
SMALL'S DEHYDRATED ALFALFA MEAL



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If your aim is to obtain dehydrated alfalfa that meets your exacting specifications every time and is delivered whenever and wherever you require it, just set your sights on Small's Dehydrated Alfalfa.

Range, Pasture Feed Conditions At Peak Level

Range and pasture feed conditions in 17 western range states showed a contra-seasonal increase during October and the early November condition was reported at the highest level for this time since 1942, the U.S. Department of Agriculture said.

General soaking rains covered practically the entire western range area in October and all but three states (the Dakotas and Wyoming) reported gains in range feed condition. Sharpest increases came along the Pacific Coast. California ranges and pastures are the best for this season in 32 years.

The recent precipitation covered practically all of the dry sections in the West and present soil moisture supplies are the best for many years.

Range feed is uniformly rated as good to very good, except in a narrow strip along the Canadian border from western North Dakota to the Pacific, where conditions are reported as fair. In addition, there are local areas in western Kansas, north central Oklahoma, the Trans-Pecos of Texas, southwestern Arizona and southern California where previous dry weather limited early growth and range feed conditions are still only fair.

The outlook for wheat and small grain pastures is very good. Some small grain pasture, from the Central Plains south, is already being grazed, but a substantial acreage of wheat will not be eligible until after Jan. 1, because of Soil Bank restrictions. There is adequate feed in the wheat pasture area from ranges, volunteer wheat, sorghum stubble and harvested feed to carry available stock until Jan. 1, USDA said.

Cattle Conditions Good

Cattle and calves are reported in the best Nov. 1 condition since 1945. Good to very good grazing and generally mild, wet weather have extended gains through October, a month when there is normally a moderate shrink and some decline in condition. The market movement of cattle and calves has increased seasonally, but the October volume is well under last year. There is a strong local demand over the entire western area for brood cows and light feeders. Present indications point to an increased carryover of cattle, particularly the stock that will be wintered by the rancher or grower.

The reported condition of sheep and lambs shows a one-point gain during October with the Nov. 1 condition at the highest level for this date in 12 years. Fall lambing is well underway in southern California and conditions are quite favorable. The bulk of the range lambs has moved out of first hands.

SPECIAL BRAND LABEL — A special brand has been developed for the feed that will be produced during the Midwest Feed Production School Nov. 20-22 in Kansas City. More than 9,000 50-lb. bags will be used in the various demonstrations during the program, and each sack will bear this insignia. The bags were furnished equally by the Bemis, Union and International bag manufacturing firms.

John Poggenklass J. M. Chinn

Staley Milling Co. Announces Promotions

KANSAS CITY—Two promotions in the sales organization of Staley Milling Co., Kansas City, were announced recently by Thomas W. Staley, president.

J. M. Chinn, area representative for the firm in south central Kansas for 11 years, has been made sales manager for the Kansas-Colorado area. He will continue to live in Wichita.

John Poggenklass, for more than four years a representative for Staley Milling Co. in Iowa areas, will be in general charge of the area in western Iowa and Nebraska. He will live in Atlantic, Iowa.

Athens Milling Buys Poultry Research Farm

COLBERT, GA.—The acquisition of a 315-acre farm for poultry research was announced this week by Sherman Applebaum, president of the Athens Milling Co.

The farm, located about 15 miles northwest of here, has been used for commercial broiler raising and has three houses each with a 10,000-bird capacity.

In addition to testing feeds now being manufactured by the Athens firm, Mr. Applebaum said the facilities will also be used for the study of ingredients and additives as well as equipment.

Mr. Applebaum said the firm is planning to hold a series of field days at which poultrymen will be invited to visit the research farm.

Southern States Reports Increase In Feed Tonnage

RICHMOND, VA.—The sales volume of the Southern States Co-operative and its affiliated groups was 23% higher in the 12 months ended June 30 than in the previous 12 months, stockholders at the annual meeting here were told.

The organization's five feed plants turned out 815,000 tons of formula feeds last year, an increase of 161 000 tons compared with the previous year. A sixth feed plant was opened here recently.

The total volume for the recent 12 months was $192,654,000. It includes $110 million in wholesale purchasing, $51 million in sales by local cooperatives, $11 million in sales by local petroleum cooperatives and $19 million in wholesale marketing of eggs and grain. The cooperative operates in six southern states.

Operating costs have risen from 8.6¢ on each dollar of volume in 1953 to 9.4¢ this year, it was reported.

Verne H. Kellogg Dies

WICHITA, KANSAS — Verne H. Kellogg, 69, died recently at his home in Wichita, following an extended illness. He and his brother, Fred, who died in 1950, established the firm of Kellogg Bros. Feed & Seed Co. in 1907. Mr. Kellogg's son, Robert Verne Kellogg, will continue to operate the business, which includes two feed, seed and farm supply stores in Wichita.

Nutrition Knowledge Changes Fast, Missouri Group Hears

By THOMAS E. LETCH
Feedstuffs Staff

COLUMBIA, MO. — The areas of knowledge about livestock nutrition and health grow larger each year. But the same knowledge that research uncovers, opens up many new areas where knowledge is needed. This fact was evident at the Missouri Feed Conference Nov. 5-6 at the University of Missouri where approximately 150 persons registered for the fast-moving meeting.

Included on the program were three panel discussions which featured feed company and allied trade representatives along with college specialists. University of Missouri personnel presented information on recent nutrition research and on other pertinent topics.

Problems facing the formulators of today's swine feeds were the subject of a panel made up of Dr. R. W. Luecke, Michigan State University; Dr. L. F. Tribble, University of Missouri, and Bob Mills, a swine producer from Booneville, Mo. Dr. M. L. Brinegar, Allied Mills, Inc., Libertyville, Ill., was the moderator.

Dr. Luecke, discussing nutrition of the baby pig, noted that extremely early weaning has not proved successful. "It depends on the individual set-up of the producer," he said, "but weaning at 5 to 6 weeks seems to be the most practical on the farms I have seen."

The problems encountered with early weaning are that the baby pig is more susceptible to disease because the pigs seem to have less ability to produce disease-fighting antibodies in their blood. Even under sanitary conditions, he continued, there are many instances of digestive disturbances in early-weaned pigs until they are 3 to 4 weeks old.

"In general, our best results have been obtained by weaning at six weeks, feeding creep feed and then free choice. Feeding a complete feed until the pig is 70 lb. shows some advantages," he stated.

Critical Age

The period in a pig's life from birth to 50 to 75 lb. is more critical than from then to market, explained Dr. Tribble. However, he noted that proper supplementation during the latter stage is important. The supplement fed to pigs has certain requirements:

1. Vitamins. Additional vitamins are not too important, although with confinement rearing. A and D and especially D may become important factors.

2. Minerals. This poses a formulation problem because when the amount of corn fed to a pig varies, so should the mineral level.

3. Antibiotics. "We aren't getting as much response to antibiotics as we did earlier," Dr. Tribble said. "However, this may be because we have cleaned up the infection problems for all the pigs, since we note that the control lots have increased their gains. We will continue to feed antibiotics, at least until the pig weighs 100 lb."

Other points to keep in mind, Dr. Tribble said, are that on confinement feeding, all nutrients must be included in the feed which previously had been obtained on pasture, and that milo on a free choice basis may not be quite so palatable as corn.

Farmer's Viewpoint

A Missouri producer's viewpoints were presented by Mr. Mills. "If a starter ration gets results, I don't mind paying a good price. For this ration I am not going to shop around for a cheap feed." What he looks for in a starter, he said, is the following:

The feed must be very palatable, high in energy, high in antibiotics and low in fiber. Palatability is most important. Protein content should be 20-25%. Uniformity and proper mixing are needed.

For the pig from 15 to 30 lb., Mr. Mills said that he still wants a very palatable ration with plenty of good rolled oats, fish meal and soybean oil meal rather than tankage. When the pig is growing from 30 to 60 lb., he doesn't need as much rolled oats but still needs high quality protein and antibiotics.

After 60 lb. Mr. Mills said that he would want to buy a supplement and feed his own grain. "At this stage I am more particular about the cost of the feed. If a commercial ration gets too high in relation to what goes into it, I will buy ingredients and mix my own," he said.

"We wean at 6 to 8 weeks," he continued, "but we want a starter ration that is good enough to carry the pig if sow's milk is in short supply."

For a gestation ration, Mr. Mills said that he wants a good protein supplement to feed his sows cleaning up corn and barley fields. It should contain plenty of animal protein, particularly during the last third of the gestation period. "We find that we get bigger pigs at farrowing time if we follow this practice."

By using an antibiotic, Mr. Mills reported that the baby pigs were larger and stronger at weaning time.

Focusing his attention on the problems of the feed manufacturer, Dr. Brinegar said that the mixers must: (1) Interpret experiments, (2) second guess feeders to build the ration according to the way it will be fed, (3) gauge ingredient quality so as to be able to compensate for deficiencies or interrelationships and (4) determine the best way for putting together all the proper nutrients.

Feed Quality Tests

A second panel discussion related itself to ingredient and ration evaluation. Moderated by H. C. Schaefer, Ralston Purina Co., St. Louis, it had as its members Dr. A. J. Gehrt, Moorman Manufacturing Co., Quincy, Ill.; C. M. Barnhart, Missouri Department of Agriculture, Jefferson City, Mo., and Dr. F. W. Quackenbush, Purdue University.

Dr. Gehrt explained to the feed men the use of the pepsin digestibility method for determining the quality of animal protein used in feed. He said they had found they could reduce the time it takes to test digestibility of animal proteins from several days to 16 hours.

The method, recently adopted by the Association of American Feed Control Officials, uses a warm solution of pepsin to digest a defatted sample of the protein. The residue is examined with a microscope to determine the percentage of indigestible material.

"In our early tests we found that meat scraps contained 20% indigestible matter," he said. "Working with our supplies we were able to get that down to 8%." He showed colored slides of microscopic views showing hoof, hair and other indigestible substances.

Dr. Gehrt also stressed the importance of proper processing. Overheating of protein can harm it.

Using overheated soybean oil, meat scraps and fish meal an experiment was set up to test this point. The tags read the same on two different rations, but one contained the overheated ingredients and the other contained properly processed material. At nine weeks of age, a broiler fed the overheated ration weighed 2.27 lb. compared to 2.94 lb. for the bird fed the control ration. At 12 weeks a pig on the control weighed 145.9 lb. compared to 107.8 lb. for the pig on the overheated feed.

Although there are still unanswered questions, said Dr. Gehrt, "we are

sure the indigestible portion does not do any good nutritionally."

Microscopic evaluation of feed ingredients and complete feeds was discussed by Mr. Barnhart. Through the microscope, he said, it is possible to identify the components in a feed because of the different appearance of cells of the ingredients. Through calculations, Mr. Barnhart said they could determine within 0.5% the proportion of ingredients in a feed.

The biological evaluation of formula feeds as used in Indiana was the topic of Dr. Quackenbush. By setting up certain standards of growth, and feeding different feed samples, they are able to rate feeds as being superior, inferior or in between. They have tested 202 chick starter feeds, Dr. Quackenbush said, and found three superior and 11 inferior.

"There have been some objections by feed manufacturers to our methods. However, we use only the information that shows a feed to be inferior and one of our staff makes a call on the feed manufacturer. People so contacted have been appreciative," Dr. Quackenbush said.

"By this method, we feel we have improved the feeds available to the Indiana grower."

Newer Feed Additives

Research men from three of the large pharmaceutical companies appeared on a panel discussion of newer feed additives. Dr. Stanley A. Vezey, American Cyanamid Co., St. Louis; Dr. Tom Means, Eli Lilly & Co., Indianapolis, and Dr. F. W. Washko, Merck & Co., Rahway, N.J., were introduced by R. J. Karrasch, Hales & Hunter Co., Chicago.

Some of the questions feed men ask concerning feed additives, Mr. Karrasch said, are (1) what are its effects on other animals, (2) what is the ingredient used as the carrier, (3) what are its effects on fertility and hatchability, (4) what is the analysis of its ingredients, (5) can it be obtained in adequate quantities, and (6) will it make the farmer any money?

Dr. Means outlined the problem created by worms in swine and how the new Lilly antibiotic Hygromix is being used to control these worms.

"We don't know all the answers," Dr. Means said, "but tests are currently underway at several places and we hope to get it approved for sows and to also offer it for use in a supplement program."

Feeding Aureomycin at continuous low levels to ruminants has brought 5-20% increase in gains and 5-15% increase in feed efficiency. These results of continued success with the antibiotic were reported by Dr. Vezey.

In addition to the weight and feed efficiency gains, use of the antibiotic suppresses certain disease conditions, he stated. It lowers the incidence of shipping fever, foot rot, scours and hastens the convalescence from rhinotracheitis. It also helps fight anaplasmosis, he said.

"We routinely get increased carcass quality," Dr. Vezey stated in talking about cattle.

A new drug called Nithiazide that has been developed by Merck is very effective in controlling blackhead in turkeys and chickens, according to Dr. Washko. The Merck specialist cited a number of experiments to demonstrate the effectiveness of the drug. One such experiment was started in a large turkey flock infected with blackhead. After 20% had died, Nithiazide was put in the water at a level of .025%. The first week five more birds died but the second week there were no more deaths, Dr. Washko said.

"The drug has been successfully tested with 89,000 turkeys and 59,000 chickens," he said.

Recommended use is in the water at 0.02% for several days and then in the feed at a level of 0.0125%.

In testing for toxicity, Dr. Washko explained that they had fed Nithiazide at a level of 0.1% for several weeks without any abnormalities appearing. They have found, however, that palatability decreases above the 0.4% level.

In summing up, Mr. Karrasch noted that production people are never happy with the problems posed by new feed additives, but "we would certainly not want to go back to the days when we did not have them available."

RUMINANT NUTRITION—Speakers included Dr. Charles W. Turner, dairy husbandry; Dr. M. E. Muhrer, agricultural chemistry; Dr. C. P. Merilan, dairy husbandry; Dr. G. B. Garner, agricultural chemistry; G. B. Thompson, W. C. Ellis and Dr. C. V. Ross, animal husbandry.

Feeding thyroprotein to dairy cattle was the topic of Dr. Turner. He explained that thyroxin secretions vary five-fold from animal to animal, and that because of this variation, thyroprotein is effective in increasing milk production for those animals that do not secrete as much thyroxin as their bodies can utilize. The hormone goes into the cow's blood stream through the stomach instead of from the thyroid gland.

In answer to some of the questions generally asked about the use of thyroprotein, Dr. Turner made these explanations:

When a cow is at the peak of her milk production, there is little further increase from the use of thyroprotein. But through use of thyroprotein, her peak production can be maintained for a longer time with the result that total milk production per lactation is increased 20 to 30%.

It is erroneous to say that a cow fed thyroprotein drops below her regular production toward the end of the lactation. While other cows are experiencing a gradual drop in production, the thyroprotein-fed cow is maintaining near peak production. Her milk production eventually falls off because of a decline in the supply of other hormones that control milk flow. This drop in output looks to be more severe than on other cows because it is not so gradual.

Withdrawal of thyroprotein must be gradual because the cow's own thyroid gland becomes inactive during thyroprotein feeding. This rapid reduction in production is all right at the end of the lactation, but not during lactation. A reduction in the administration of thyroprotein over a three-week period will enable the cow's thyroid to function normally again.

Criticism that cows fed thyroprotein one year will not produce as well as they should the next year has not proved to be true in several experiments with identical twins, Dr. Turner said.

"It is very important," he concluded, "to give a cow all the feed she will consume while using thyroprotein."

Reporting on the use of stilbestrol for feeding lambs, Dr. Ross cited experimental work which indicated that use of the hormone at the level of from 0.1 to 8 mg. per head per day produced response in daily gain.

The studies have shown the importance of the energy and protein ratio when stilbestrol is used. Daily gains and feed efficiency were both improved when high energy rations were supplemented with high protein. Much more study is needed, Dr. Ross said.

Dr. Merilan questioned the wisdom of using antibiotics in calf rations. "By controlling some microorganisms in the rumen, we allow other secondary ones to prosper and this poses a potential problem."

He noted that in Missouri experiments they found that a calf has more trouble when it is shifted from an antibiotic feed to one without an antibiotic than those who have never had the antibiotic. "This may be because of a change in the disease control pattern, or it may be because of a change in the liver," he said.

"We should know," he continued, "what the effects of an antibiotic are at various levels and with various concentrates."

Turning to the problem of forage toxicity, Dr. Merilan said that the inclusion of a readily fermentable carbohydrate in an animal's ration will lessen this problem.

In conclusion, he pointed out that "whether additives help or hurt us will depend on our knowledge and how wisely we use them."

Rumen Requirements

A study of microorganisms present in a ruminant's digestive tract indicates that a ruminant ration can be rather simple with respect to amino acid composition and balance, Dr. Muhrer said.

In reporting on recent rumen research Dr. Muhrer said 12 different varieties of rumen microorganisms were isolated from the stomach of a roughage-fed, fistulated sheep and a study was made of the organisms' nutritional requirements and subsequent composition.

Certain groups of amino acids were required for growth but glutamic acid was the only single amino acid required by all the organisms, he said. However, some of the other amino acids appeared to act as a stimulus with respect to optimum growth of the microorganisms.

Three of the rumen organisms failed to grow when all the acidic amino acids were eliminated from their culture media. One required some of the basic amino acids and two others failed to grow in the absence of the aromatic amino acids.

All of the organisms tested were able to make the essential sulfur-containing amino acids from sulfate.

"It's important to pay attention to the growth requirements of rumen microorganisms since they furnish a

(Turn to MISSOURI, page 103)

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633 Board of Trade
KANSAS CITY, MISSOURI

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Farm Commodity Price Trend Called Weak

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON — The U.S. commodity markets and the national economy as a whole do not appear to be heading for any sensational inflationary aspects, international developments notwithstanding.

That is the feeling of some observers here and these same sources indicate that the farm economy may even be in for further deflation. This may well include the national economy, too, they feel.

While there is much talk of the dangers of Soviet arms expansion, this would seem to have little bearing on the farm economy and not nearly so much as U.S. Department of Agriculture's latest crop report which shows a tremendous pile-up of feed grain supplies plus a comparatively huge supply of soybeans.

Starting with the carbohydrate group — corn and sorghums — there seems to be a surplus from even the new crop far in excess of what might reasonably be consumed — even if USDA decides to take all of its old crop corn off the market.

The November 1 crop report shows a small increase in the sorghum crop but likewise a small increase in the corn crop. Wet harvesting weather, according to USDA officials, may reduce the availability of the sorghum crop for storage.

This washes out the gains which USDA may find in a lower sorghum crop availability.

Pressure on Corn

It means to officials here that a heavy outturn of wet sorghums possibly as much as 75 million bushels may break the corn market price. Corn currently is reflecting at country points on the basis of No. 2 yellow about the low loan level support of the national average of $1.10 bu. and high moisture corn is reported here from USDA sources as selling at 70¢ bu.

The soybean crop estimate is again boosted up to the 490 million bushel level, a record-breaker.

This condition arouses linseed interests to hope that USDA will ask the government to lower its tariff bars on imports of flaxseed. That chance appears dim.

The wet sorghum situation may persuade USDA to halt its offers of stocks of corn for export demand. As much as 75 million bushels of wet sorghums are likely to be a backbreaker for USDA's attempt to hold corn prices at approximately $1 bu. in states tributary to Chicago.

The national situation with feed supplies and oilseed proteins indicates that prices cannot go higher except in an unusual war-threat demand—and if that condition is not true what can boom feed grain prices?

A collateral observation: This week USDA's wheat agreement subsidy unit announced that it has moved forward its usual late winter adjustment of subsidy payments to reflect new crop wheat deliveries. Officials say that they are obtaining reports of low prices for U.S. wheat and this means to them that exporters now sense a new low export price for the commodity.

It all seems to add up to over-all lower prices for all grains.

R. W. Gilbert, Grain Supervisor, Dies

CHICAGO—Ralph W. Gilbert, 65, grain inspection supervisor of the U.S. Department of Agriculture in Chicago, died Nov. 8 following influenza and pneumonia. Mr. Gilbert was born at Grayville, Ill., and had been in the federal grain inspection service more than 39 years, most of the time in Chicago.

Eugene Kerr — K. Max Isaacs — Harry J. Muller — William Rohaly

Hales & Hunter Co. Promotes, Appoints Seven to New Posts

CHICAGO—Seven promotions and appointments have been announced by Hales & Hunter Co., Chicago, manufacturers of Red Comb and Pioneer Feeds.

Eugene Kerr has been named chief chemist, research and analytical department. He joined the firm in February, 1957. He holds both B.S. and M.S. degrees from the University of Arkansas.

K. Max Isaacs is the new livestock nutritionist for Pioneer Feeds. He joined the firm in 1954 and was a salesman in northern Iowa at the time of his promotion. He is a graduate of Purdue University with a bachelor's degree in agricultural education and a master's degree in nutrition and physiology.

Dan Schaaf was promoted to manager of the specialty feeds department. He joined the firm in 1931 and was supervisor of the order department at the Hales Mill at the time of his promotion. He holds bachelor of science and master of science degrees from the University of Wisconsin.

Harvey Cigainero was promoted to quality control supervisor and traffic manager of Red Comb Pioneer Mills, Inc., Lexington, Ky. For the past year he served as chief biologist of the research and analytical department. He has a B.S. degree from the University of Arkansas.

Donald J. Stone was promoted to supervisor of sales order department, Hales Mill, Chicago. He joined the firm in 1948 and was supervisor of the traffic and sales order department at Red Comb Pioneer Mills in Lexington at the time of his promotion.

Harry J. Muller has been appointed eastern account sales manager. For the past six years he has owned and operated a poultry farm in Grand Gorge, N.Y. Previously he was associated with International Business Machine Co. and American Air Lines, Inc. He was graduated from Drew University, Madison, N.J., and received his master's degree from Cornell University.

The appointment of William Rohaly as mechanical engineer in the manufacturing and engineering department was also announced. Before joining Hales & Hunter, Mr. Rohaly was associated with the International Harvester Co. He received his bachelor of science degree in agricultural engineering from the University of Illinois in 1953.

Wallace & Tiernan Names Executive

BELLEVILLE, N.J.—Robert T. Browning has been named executive vice president of Wallace & Tiernan, Inc., Belleville. He will assume his new duties on Jan. 1, 1958. Mr. Browning's promotion was announced by F. G. Merckel, president, after a meeting of the executive committee of the board of directors.

Mr. Browning has been associated with Wallace & Tiernan since 1930, starting as a field engineer selling chlorination equipment. Since then he has held many responsible positions as the company developed diversified interests in the fields of chemicals, pharmaceuticals, precision instruments and chemical feeding equipment. For the past four years Mr. Browning has held the position of vice president.

Feedstuffs: Average Prices and Index Numbers, With Comparisons

Compiled by U.S. Department of Agriculture—Base Period 1947-49=100
(All prices of feeds and grains in dollars per ton)

	5-Year average 1951-55	Nov. 5, 1957	Nov. 12, 1957	Change from previous week	Per cent Nov. 12 is of 5-year average
OILSEED MEALS—					
Prices at principal markets:					
Soybean meal	85.30	61.80	61.95	+ .15	73
Cottonseed meal	74.25	57.95	58.25	+ .30	78
Linseed meal	73.35	57.85	57.35	— .50	78
Copra cake or meal	73.00	54.50	54.25	— .25	74
Peanut meal	75.15	52.50	52.50	..	70
Index of weighted prices	99.9	74.1	74.3	+0.2	..
ANIMAL PROTEIN FEEDS—					
Prices at principal markets:					
Meat meal	94.60	75.35	73.45	—1.90	78
Tankage	96.35	74.60	72.40	—2.20	75
Fish meal	139.40	129.65	129.75	+ .10	93
Index of weighted prices	88.1	73.8	72.3	—1.5	..
GRAIN HIGH-PROTEIN FEEDS—					
Prices at principal markets:					
Gluten feed and meal	63.05	49.45	47.05	—2.40	75
Distillers dried grains	68.80	55.00	55.00	..	80
Brewers dried grains	56.15	50.50	50.60	+ .10	90
Index of weighted prices	89.3	71.2	68.9	—2.3	..
WHEAT MILLFEEDS—					
Prices at principal markets:					
Bran	53.40	38.95	37.85	—1.10	71
Middlings and shorts	56.45	39.60	38.65	— .95	68
Index of weighted prices	90.4	64.7	63.0	—1.7	..
OTHER MILLFEEDS—					
Prices at principal markets:					
Hominy feed	61.15	47.45	48.45	+1.00	79
Rice bran	39.30	25.00	25.00	..	64
Index of weighted prices	84.5	63.9	65.1	+1.2	..
ALFALFA MEAL—					
Prices at principal markets	59.75	53.60	53.95	+ .35	90
Index of weighted prices	105.8	94.9	95.5	+0.6	..
MOLASSES, FEEDING—					
Prices at principal markets	27.85	28.81	28.00	— .81	101
Index of weighted prices	82.9	85.7	83.3	—2.4	..
ALL FEEDSTUFFS—					
Index of weighted prices	94.0	72.6	72.0	—0.6	..
FEED GRAINS—					
Prices at principal markets:					
Corn	55.00	40.60	39.60	—1.00	72
Oats	51.90	43.90	43.80	— .10	84
Barley	52.80	43.20	43.60	+ .40	83
Grain sorghums	53.60	36.30	35.80	— .50	67
Index of weighted prices	87.7	66.2	64.9	—1.3	..

Alvin W. Lovekamp Heads Illinois Feed Group

SPRINGFIELD, ILL. — Alvin W. Lovekamp, U. & L. Grain Co., New Berlin, Ill., was elected president of the Illinois Feed Assn., at the annual convention held jointly with the Illinois Poultry Improvement Assn., Nov. 13-14. He succeeds Dexter Obenhaus, Community Feed Mills, Princeton, Ill.

Ivan Miller, Crawford County Farmers Exchange, Robinson, Ill., was chosen vice president and Dean M. Clark, Chicago, was renamed executive secretary.

New directors of the feed group are as follows: Dan Teefey, Mt. Sterling, Ill.; Mr. Miller; Herbert Woolsey, Vandalia, Ill.; Willis Sauter, Tremont, Ill.; Carl Rylander, Waterman, Ill., and Keith Wheelock, Galt, Ill.

The following officers were elected by the poultry group: Carl Key, Key Hatchery, Delavan, Ill., president; Henry Marlowe, Marlowe Hatchery, Huntley, Ill., first vice president; Stanley Taylor, Standard Hatchery, Decatur, Ill., second vice president, and Aubrey Harless, Harless Hatchery, Shelbyville, Ill., secretary.

Registration at the joint convention and equipment exhibit in the Springfield Armory totaled over 700. Further details of the convention will appear in a coming issue of Feedstuffs.

FDA Will Permit Use of Aureomycin In Dairy Rations

NEW YORK—The U.S. Food and Drug Administration this week certified the claims of the American Cyanamid Co. regarding the addition of the antibiotic Aureomycin to the rations of lactating dairy cows.

FDA action came on a petition submitted by the American Cyanamid Co. whose officials said that this marked the first time a government agency has approved the addition of any antibiotic on a continuous basis to feeds prepared for dairy cattle. The company's claim stated that minute amounts of Aureomycin chlortetracycline in dairy rations would prevent or control foot rot, bacterial diarrhea (scours) and rhinotracheitis-shipping fever complex in lactating cows.

Until now, the use of any antibiotic in the rations of milking cows has been prohibited by the government because previous research indicated traces of the drug remained in the milk produced by cows receiving the antibiotic. Officials said that company's claim was upheld because it was able to demonstrate that, at the recommended level, no trace of the antibiotic could be detected in the milk. Among the data submitted to substantiate the claim was evidence that no Aureomycin appeared in the milk when the antibiotic was added to rations at three times the recommended level, it was reported.

"The importance of these approved claims to the feed industry," said F. O. Noel, animal feed products manager for the company's Farm and Home Division, "is that feed manufacturers now are in a position to offer their dairy customers a feed that effectively fights disease."

As approved by FDA, the American Cyanamid claim calls for the addition to dairy rations of 0.1 milligram of Aureomycin per pound of body weight on a continuous basis. This level corresponds to the amount routinely fed to beef cattle, according to Mr. Noel.

A study of the problem was concluded this year by company research men and specialists at the University of Rhode Island department of dairy and animal husbandry.

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Methods of Adding Fat to Pelleted Feed

By C. N. Hultberg
California Pellet Mill Co.

EDITOR'S NOTE: In the accompanying article, C. N. Hultberg, vice president, California Pellet Mill Co., Crawfordsville, Ind., discusses methods, problems and factors involved in adding fat in the pelleting process. Regarding the manufacture of high-fat pellets, he says that addition of the fat after pelleting is "by far the most satisfactory procedure." He describes two systems for doing this and also discusses other points in connection with the use of added fat and the pelleting of feed.

In view of recent announcements regarding the process of adding fat to pellets, we might ask: "Why worry about adding fat to the formula before pelleting?" Or considering the economics of adding high percentages of fat before or after pelleting, if the price of fat continues to rise, its use in feed will become prohibitive except perhaps in small quantities.

Today there is no question as to the best method of adding fat in the pelleting process. To do so after pelleting the formula is by far the most satisfactory procedure. This is true when adding percentages above 3%. At a level below 3%, the fat can be added previous to pelleting.

A hard pellet will absorb fat in amounts over 3% without breaking. As a matter of fact, there appears to be a hardening of the pellet when hot fat is added.

Experiments to date show that the pellets should be cooled after leaving the pellet mill. They should be screened so that fines returned would not increase the fat content of the formula previous to pelleting. At this point, hot fat can be sprayed into the controlled and measured pellet stream passed into a tumbler until they are uniformly coated with fat.

Two Schools of Thought

At this stage there are two schools of thought. The first advocates either binning or sacking the pellets after properly coating with fat. The second method proposes that pellets, after leaving the tumbler reel, should go to a drier in order to raise the temperature of the pellets and fat—this allowing for a rapid and more thorough absorption of the fat. The pellets must then be cooled to atmosphere or room temperatures, through conventional type pellet coolers.

The first method would present the simple, low cost operation. Its operation, however, would not be as flexible. The results could vary with the fat used and with the quality of the original pellet. It would require the use of a continuous feeder for measuring a continuous flow of pellets, fat metering unit, and a reel of proper size to assure an even distribution of the fat. In the second method we would add to this unit a drier and a pellet cooler. The heat for the drier would, from necessity, be steam; thus boiler capacity would in many cases have to be increased.

Established Facts

Regardless of whether either of the above methods can be used or any other acceptable process is installed, there are some facts which are established: (a) If the fat is added to hot pellets, the rate of absorption is accelerated, causing uneven distribution. (b) The physical structure of the pellet does not deteriorate after fat is added; in fact, the reverse is true; the pellet hardness is increased. (c) If pellets are properly conditioned or tempered, there is little or no bleeding of the fat from the pellets. (d) The adding of fat to crumbled pellets is preferable to the crumbling of high-fat pellets. (e) The cost of adding fat to pellets should be no greater than that of adding fat to the meal before pelleting.

Equipment Planned

My own company has an extensive program under way for the development of the fat-adding process. Preliminary announcements indicate that a number of machinery manufacturers will also be prepared to offer equipment and installations for adding fat to pelleted feed. Due to the location of the equipment in the feed mill, it, in all probability, will require custom manufacture and engineered installations to properly fit the space and capacity of each individual plant.

Many feed manufacturers will be faced with problems which prohibit the addition of fat to pellets. Their plant facilities may not permit the installation except at extreme high costs. In many cases, their own feeding program does not permit the use of fats beyond the 6 to 7% analyzed content.

If the price of fat continues to rise, the higher percentages become economically questionable. So, many are using, and will continue to use, the method of adding fat to the formula previous to pelleting.

Lower Levels

Today feed manufacturers are successfully adding 3 to 4% fat to their feeds and are producing satisfactory pellets. There are several plants where 5% is being added. In producing a good pellet from a formula to which fat has been added, we must remember how a good pellet is made.

The volume of the mass is reduced when passing through the pellet mill die. At the same time the outer wall of the pellet is hardened into a shell from friction and heat as it passes through the die hole. When fat is added, the friction is lowered due to the lubricating properties of the fat, and the outside shell or case on the pellet does not form—thus soft pellets. To counteract this reaction, many methods have been tried. The first, naturally, is to increase die thickness. On a dry feed, a 5/32" die would be about 1½" thick. If 2% fat is added, the die thickness can be increased to 2¼" or 2½" thick. The 2½" thick die is in use in many plants pelleting broiler feeds with 3% fat added.

C. N. Hultberg

Considerable work has been done on additives, both as binders and as a means to increase the rate of absorption of the fat into the feed particles—this again to reduce the lubricating effect of the fat. To date, we are not aware of a complete and satisfactory answer in this direction.

Preparation of the formula previous to pelleting so as to increase the rate of absorption is another very important factor.

Temperature and Grind

At the present we are introducing a relatively low percentage of hot fat to a cold feed. If animal fat is used (excluding poultry fat), it solidifies immediately; the rate of absorption is reduced, causing excessive lubrication as the feed passes through the die. If, however, the fat is added to hot feed, allowing it to remain in a liquid state, the rate of absorption is greatly increased. The more particle surface made available for the fat to cover, the more readily absorption takes place. Thus, finer grinds and higher temperatures will produce harder pellets.

Admittedly, economics enter the picture. The cost of pre-heating feeds and extremely fine grinds is prohibitive. However, it is possible to use thicker dies and to use medium grinds on ingredients. It is also possible to increase the feed temperature at the pellet mill to 180 degrees and a better pellet will result.

Fats remaining in a liquid state at lower temperatures are also being used. They again are more readily absorbed by the feed particles. In some instances, it has been necessary to lower the temperature of the feed at the pellet mill mixer to as low as 140 degrees.

In further consideration of the adding of fat "before" or "after" pelleting, certainly a combination is worthy of consideration. A small percentage of about 1% fat previous to pelleting would in many cases increase capacity without lowering pellet hardness or quality. It would increase the die and roller life of the pellet mill, thus providing lower operating costs. The remaining amount of the fat could be added to pellets in percentages as required.

Chemical Reactions on Dies

Aside from the variation in pellet quality on feeds with fat added previous to pelleting, there have been some very serious chemical reactions on dies. This reaction has been identified as a corrosive or gaulling effect within the die hole. The result was die plugging and extremely low die life. This reaction has been generally charged to "added fat." It is

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not necessarily true. An acid attack on dies existed long before fats were added to the formula. It was a very infrequent condition, but there are cases on record dating back to 1935. This condition occurred with the use of certain ingredients during periods of high temperature and high humidity. It can occur from some ingredients or combination of ingredients at any time. In early days it was attributed to die failure. Today we recognize the cause as beyond the immediate control of the equipment manufacturer. We do know, however, that dies using proper alloy steels, hardened under proper and controlled heat treatment and properly made, will reduce the danger to a minimum and will occur only in very extreme cases of acid attack.

The addition of fat has, as we know, increased the danger. It has been established that improper care, storage and handling of fat and ingredients containing fat can contribute to die attacks and shorter die life. Under favorable atmospheric conditions, fat combined with given ingredients can cause die and roller deterioration. Whether the fat is added or is already present in the formula, the chemical reaction can take place in either case. The type of fat, whether animal or vegetable, seems to have little bearing on the matter.

The stability of the fat seems to be the determining factor. Whether the stability is lost by improper handling of ingredients and fat or by chemical reactions with other ingredients or by atmospheric conditions or by a combination of two or three sets of conditions, the results can and do cause a gaulling action on metals. The condition is evidenced in pumps handling fats, in elevator legs handling hot pellets and not only in the pellet mill.

Due to the very large number of variables which exist in feed formulation and manufacture, the pinpointing of disturbing elements is difficult. Considerable research is under way to establish the effect of fat and the combination of fat and various ingredients on metals.

Fat will be added to feeds. The percentage will be determined by economics as well as nutrition. The mechanical means to add high percentages of fat after pelleting will be made available. The use of lower percentages before pelleting will be made more practical, and many of the past difficulties have been and will be eliminated.

Hercules to Increase Urea Output Capacity

WILMINGTON, DEL. — Hercules Powder Co. has announced it will double its capacity for the production of urea at its Hercules, California plant. Two months ago Hercules disclosed plans to construct a 10,000 ton-a-year facility to make urea in solution at a new plant to be built adjacent to existing anhydrous ammonia facilities at Hercules.

In response to increased demands from agricultural and industrial users of urea, directors of the company approved expansion of the plant under construction so that it would have a capacity of 20,000 tons a year, the company said.

Using the Swiss Inventa process, Hercules will have the first plant west of the Mississippi, and the third in the nation to produce urea by this method. Completion of the expanded urea facility is expected in the fall of 1958.

The urea unit will utilize ammonia and carbon dioxide as raw materials, both available at the existing plant.

For agricultural use the plant will produce a new Hercules product, "UN-32," a urea nitrate solution. "UN-32," which has been manufactured by Hercules using ammonium nitrate made by the existing plant, is a high nitrogen content liquid.

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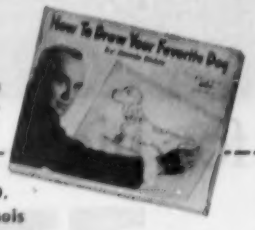

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TEST 1

STABILITY IN STORAGE OF ANTIBIOTIC SUPPLEMENT

Zinc Bacitracin can be stored with minimum loss of antibiotic potency

	% Potency Retention in Supplement after 3 Months' Storage	
	77°F	104°F
Zinc Bacitracin (Baciferm)	**100%**	**99%**
Ordinary Bacitracin (Brand "A")	80%	16%

TEST 2

STABILITY IN STORAGE OF BROILER RATION

Zinc Bacitracin maintains full antibiotic value in the feed

Storage-stability tests were run on Zinc bacitracin and two brands of ordinary bacitracin. A typical broiler ration was used and was assayed for antibiotic potency after 6 months' storage at a temperature of 77°F (room temperature).

	% Loss in Antibiotic Potency after 6 Months' Storage of Broiler Mash at 77° F
Zinc Bacitracin (Baciferm)	**No Loss**
Ordinary Bacitracin (Brand "A")	37%
Ordinary Bacitracin (Brand "B")	26%

TEST 3

STABILITY IN PELLETING

Zinc Bacitracin increases profits in pelleting because antibiotic potency is maintained — no overfill needed

Tests on zinc bacitracin and three brands of ordinary bacitracin were conducted to determine the amount of bacitracin lost from a typical broiler ration when subjected to the pelleting process. Assays were run 1 day after pelleting.

	% Potency Retention Across Pelleting Step and After One Day Holding Time
Zinc Bacitracin (Baciferm)	**98.8%**
Ordinary Bacitracin (Brand "A")	60.4%
Ordinary Bacitracin (Brand "B")	78.6%
Ordinary Bacitracin (Brand "C")	88.8%

TEST 4

STABILITY IN STORAGE OF PELLETED FEED

No loss of antibiotic with Zinc Bacitracin

Pelleting tests were conducted on poultry feed containing zinc bacitracin and 2 brands of ordinary bacitracin. All pelleting was done with a Sprout-Waldron type machine at 170°F. Assays were made 6 days after pelleting and 21 days after pelleting.

	% Loss in Antibiotic Potency During Storage	
	6-day Pellets	21-day Pellets
Zinc Bacitracin (Baciferm)	**No Loss**	**No Loss**
Ordinary Bacitracin (Brand "A")	26.3%	37.1%
Ordinary Bacitracin (Brand "B")	9.3%	14.9%

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An Analysis of the High-Fat Pellet Situation

By J. L. Grahek
Sprout, Waldron & Co., Inc.

EDITOR'S NOTE: Noting the increased interest in high-fat pellets, J. L. Grahek, manager of pellet mill sales for Sprout, Waldron & Co., Muncy, Pa., prepared the accompanying report on the current status of efforts to incorporate higher levels of fat in pelleted poultry feed. Mr. Grahek lists and discusses a number of possible methods to add more fat to pelleted feed, and he concludes that at present it appears that adding fat to the finished pellet holds the most promise.

J. L. Grahek

There can be no doubt that high-fat pellets have caught the imagination of all those concerned with the higher energy, faster growth and better feed conversion they make possible. It is hard to pick up a current trade journal without finding some story or article about new developments in the race to secure high-fat pellets. With so much emphasis being placed on what is new, this is perhaps the ideal time to pause and take stock; to review what has been done and what is being done, and to attempt to indicate what the future may hold.

The trend toward the use of more and more fat in feed formulation got its impetus from the surplus of animal fats which became very evident in 1955 and 1956. Since the trend definitely indicated the availability of more and more of these high energy animal fats, feed mills started to take advantage of them by adding them to many of their formulas. The simultaneous movement toward the use of pelleted feeds brought a temporary halt to the drive to include

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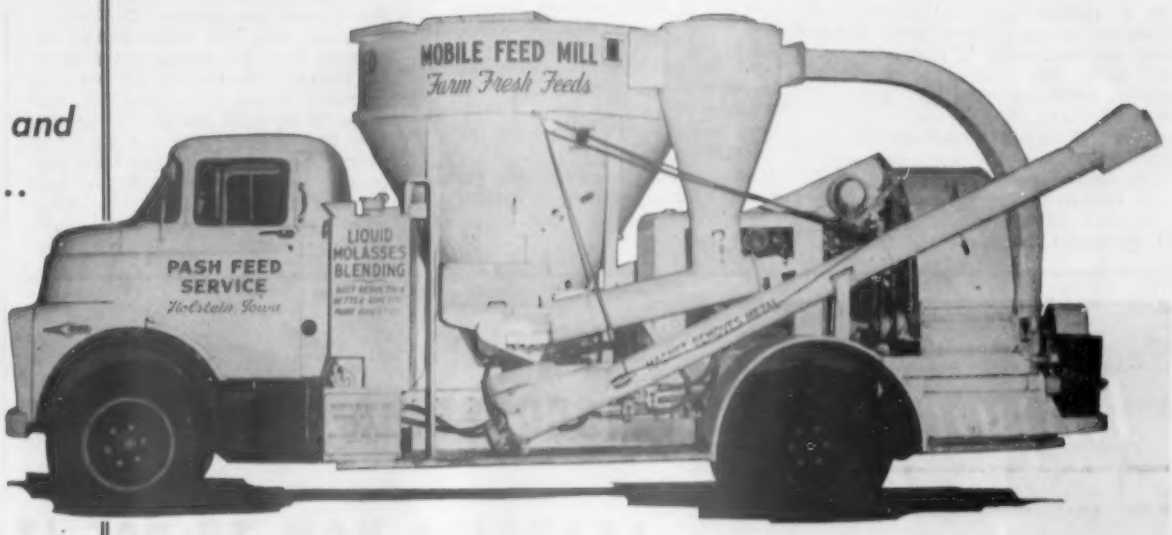

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more fat, for it soon became evident that the addition of levels above 3 to 4% created pelleting difficulties which could only be solved by increasing the cost of production.

Nutrition Research

About this time, there began a series of technical articles in the journals concerning the value and limitations of the high fat content. It was pointed out, for example, that animal fats, being very high in energy, can throw off the protein-energy balance badly unless protein is added from a concentrated source. Dr. Gerald F. Combs of the University of Maryland made it clear that in the final analysis, what is really important is the cost of feed per pound of broiler produced. Another question raised for the feed formulator contemplating the use of animal fats to any extent was the need for antioxidants to combat the tendency of high fats to oxidize and turn rancid.

Poultry scientists, including those at Maryland, Delaware and the U.S. Department of Agriculture, conducted a series of investigations in which different levels of animal fats were added for both laying hens and broiler production. Greater production on less feed seems to be rather uniformly reported. These tests emphasize the importance of stabilizing the fat to prevent rancidity, because rancid fat in feed will destroy vitamins E and A quite rapidly.

The extensive feeding tests conducted by A. W. Purdue & Sons in Salisbury, Maryland, showed that when a ration containing 12.5% fat was fed to battery-raised broilers, a feed efficiency of 1.99 pounds of feed per pound of meat produced was realized. In general, the overwhelming evidence points to the value of incorporating higher fat content in feeds than currently permitted by pelleting equipment.

Attempts to overcome this limitation fell into a number of categories.

1. Design changes in the equipment itself.
2. Pre-cooking of formula, or various parts of the formula.
3. Pre-conditioning by fine grinding.
4. The use of additives.
5. The addition of fat to the finished pellet.

Let us look at each of these in turn.

1. Equipment Design: It first seemed as if the utilizing of thicker dies would solve the problem, and in many cases, this worked out, permitting satisfactory pelleting at fat levels up to 5%. Since the fat provided lubrication for the dies, longer die life was also secured. In general, however, this and other equipment changes have not proven satisfactory for feed with more than 5% fat, and in many cases, even the 5% was found to be a bit too high to handle.

2. Pre-cooking: For the past two years, Sprout-Waldron has been suggesting that the corn in the feed formula be pre-cooked to the point where the starches are gelatinized. Such an operation on the corn portion of the formula provides an excellent bonding medium for holding the fat, and permits the making of hard pellets even with higher fat content. The amount of steam required for such an operation would be approximately 6% of the weight of the corn, in order to bring the moisture level of the corn up to between 17 and 19%, and the temperature to around 200° or 210° F. Insufficient experience in this phase has been secured, but we certainly would recommend that it be tried if the higher costs involved are not too steep to handle.

3. Pre-grinding: Most pellet manufacturers agree that the finer the grind, and the smaller the particle size, the better will be the pellet. The problem for the feed manufacturer is the fact that the corn required for mash should be coarse, whereas for pelleting, it should be fine. This means double storage or setting up the flow sequence so that the corn going to the pelleter is preground. We recommend that corn be ground through a ⅛" hammermill screen before pelleting. Of equal importance is the soybean meal. As marketed today, the soybean meal is very coarse and glazed. It is our recommendation that it be passed through a 1/16" hammermill screen before being added to the mixture. The coarse, glazed surface of the soybean is very poor for binding and absorbing of the fat. Here, too, additional research is needed, and we would recommend, at least on an experimental basis, that both the corn and soybean meal be pre-ground before mixing and pelleting.

4. Use of Additives: As equipment manufacturers, we are not in a position to advise with respect to the use of additives. The drive to find a binding agent which would not decrease the energy of the feed is still going on. Many tests have been made as to the value of adding bentonite, but there is concern over the fact that bentonite may tie up an appreciable amount of certain vitamins, particularly vitamin A. Murray's Feed Service has done experimental work with bentonite, dry cane feed, molasses and red dog flour. Other research studies have indicated corn gluten meal as a possible additive from the viewpoint of price and nutrition; however, its limited availability is a definite hurdle. Other additives which have been tested include diphenyl-p-phenylene-diamine, Packo, potato starch, Solulac, cereals and special concentrates of hard wheat midds. or soybean meal and pure beef tallow.

5. Fat Additions to Finished Pellet: This approach starts from the concept that in current practice, good hard pellets can be made very ef-

(Turn to HIGH-FAT PELLET, page 97)

DISCOVERING WHAT'S NEW

LEARNING HOW TO USE IT

Most of us accept what goes on in our formula feed industry with complacency. We believe we've got things going very well. Nutrition is far advanced; we're getting quite a lot out of what we feed farm animals. When research and experiment develop something new, we'll get around to reading about it in our trade papers.

This take-it-pretty-much-for-granted attitude is a tribute to a sound, well-organized industry. But that's the point. Things go *so* smoothly we don't realize that there are a lot of interrelated services we rely on without thinking. For example, your Amburgo field representative.

Ask yourself if you'd be just as well off if he had never come around to translate a lot of research findings into daily practice . . . to tell you how a new formula or idea was tested at Golden Acres, the Amburgo demonstration farm. Decide if you'd know quite as much as you do about incorporating U.G.F. in your feeds if the Amburgo man hadn't told the unidentified growth factors story so often. Or if you would be "up" on cost-reducing so vital today if you didn't know the new Amburgo techniques.

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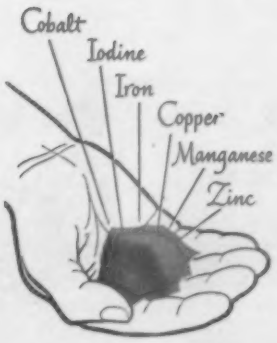

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MORTON SALT COMPANY
Chicago 3, Illinois

Distribution Stations Used To Increase Feed Firm's Area of Bulk Delivery

By PAUL L. DITTEMORE
Feedstuffs Staff

BOSTON—Wirthmore, one of the country's leading feed manufacturing concerns, has greatly increased its bulk delivery area by a two-stage haul with the use of bulk railway cars for the first leg of the shipment.

Feed is received in bulk at strategically located distribution centers, unloaded from the railway cars and then loaded into bulk trucks for the shorter hauls to customers.

The Wirthmore organization now is operating six bulk distribution stations in the New England area, as well as making bulk truck deliveries from its mills direct to customers in trucking distances from the mills. Railroads serving the milling company have supplied 47 hopper cars which, in addition to 46 box cars converted for bulk use, provide "shuttle service" between the feed mills and distribution points. A fleet of 36 bulk trucks completes the delivery of the feed to farms.

Selection of a location for a bulk distribution station involves a detailed market survey, including the potential number of feeders, a poultry and livestock census of the area that could be economically served by bulk trucks from the station, average length of haul in miles, etc. Each bulk station represents an investment of approximately $70,000, the amount needed to build and completely equip the warehouse, holding bins, etc. This investment does not include the cost of bulk trucks.

Storage Capacity

Storage bin capacity is equal to 2½ times the average daily amount of each formulation moved through the station. The bulk delivery stations are set up to handle different formulations, and the bins are 12'x12', partitioned into four 6'x6' compartments, each with a capacity of 15 tons.

For the most part, the over-the-road trucking of the feed from the bulk receiving station to the consumer is done by Wirthmore's own bulk trucks. Delivery rates are based on a flat charge per ton for six tons or more to a single destination. For loads of less than six tons, an additional charge is made, with a minimum of two tons per delivery. In some cases, dealers operate their own bulk trucks, picking up their loads at the bulk station.

Experience has shown that 360 tons per truck per month are handled under average conditions. Under particularly favorable conditions, some trucks have delivered twice this amount in a month.

EDITOR'S NOTE: One of the systems that has been developed for the handling and distribution of bulk feed involves the use of bulk distribution stations which receive feed from the main plant. The feed is then delivered by bulk truck to feeders. In this article, Paul L. Dittemore, Feedstuffs' eastern states manager, describes the bulk station operation of Wirthmore Feeds, Boston.

Each bulk delivery station should have enough business to keep a minimum of three trucks busy if the venture is to be economically sound, Wirthmore officials said.

In areas where bulk feed volume does not justify a bulk feed station, Wirthmore distributors are using van type trucks equipped with Sprout-Waldron's pneumatic discharge equipment. Bagged feed is emptied into intake hoppers of these units and conveyed by air into customers' bins.

Loading Cars at Mill

Much of the bulk feed shipped under Wirthmore's "long distance delivery" plan is manufactured at the Wirthmore mill at Brattleboro, Vermont. This mill is designed for continuous rather than batch mixing. Fourteen bulk railway cars are loaded at one car-sitting by the use of an ingenious overhead conveyor belt and a moving tripper which spouts the feed being loaded out from the overhead belt to the separate cars. The double-track loading siding is roofed in against the weather.

Orders for feed received from the distribution stations are handled in routine production schedules at the Brattleboro plant.

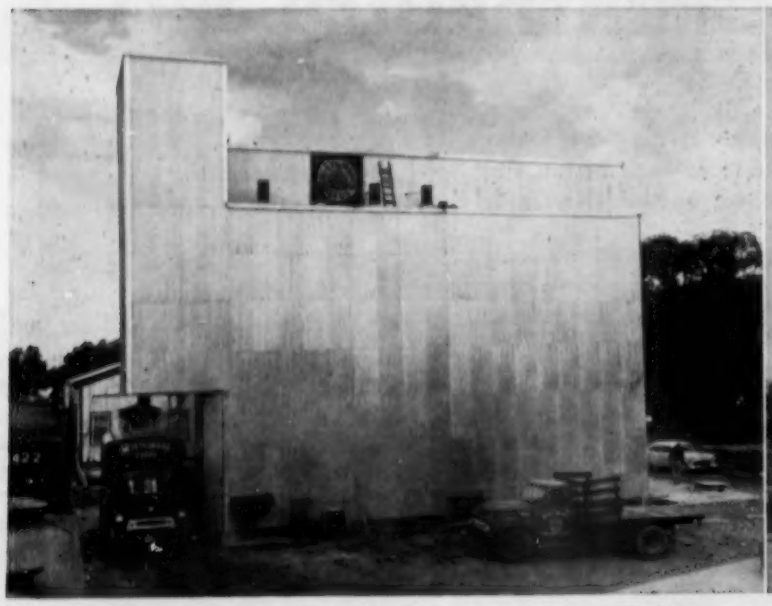
Officials in charge of the bulk distribution program said that in planning construction of a bulk distribution center, the accuracy and thoroughness of the market surveys are important. In an area of sufficient potential, an actual tonnage of 1,000 tons per month may be considered a practical starting point in planning a new bulk feed distribution station.

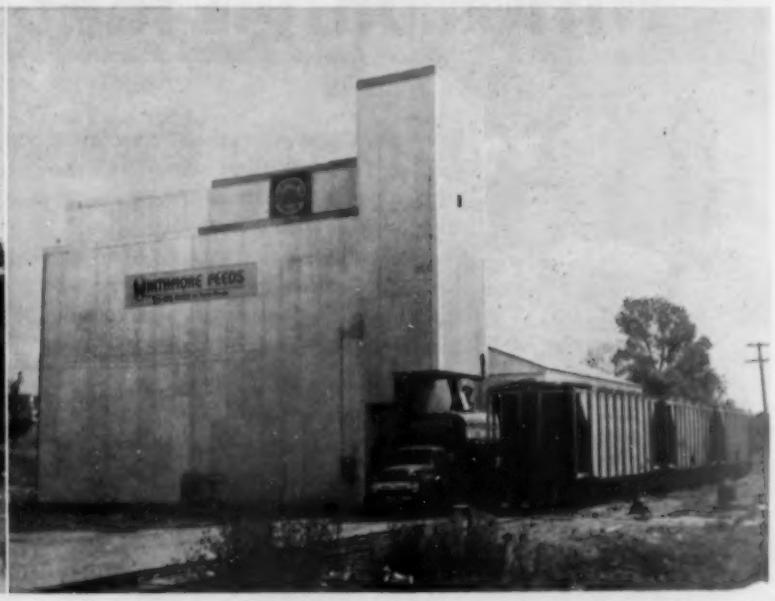
They said that they do an admittedly "soft sell" on bulk service to customers, once a bulk receiving plant is built in a community. It is their belief that feeders whose purchases are large enough to make the investment of bulk storage facilities economically feasible are good businessmen and that they will readily accept the idea of bulk delivery.

"It doesn't take long for the word to get around that we're set up to deliver feed in bulk," a Wirthmore official said, "and the chances are that each feeder will figure out for himself whether bulk delivery will save labor, time, space and expense on his farm. Our product is feed, and our major sales efforts are spent in selling feed, with bulk delivery as an added service."

Manufactured at Brattleboro, Vt., Wirthmore feeds are transported to this bulk station at Waterboro, Maine, in specially constructed rail cars. The feed is elevated into holding bins, from which it is loaded into bulk trucks for delivery to feeders in the area.

Spotting cars is eliminated with mobile spouting at the Brattleboro mill which makes it possible to load as many as 14 bulk cars at one "sitting." This new installation is now in operation. The cars are loaded by the use of an overhead conveyor belt and a moving tripper which spout the feed being loaded out from the overhead belt to the separate cars. The double-track loading siding is roofed in against the weather.





Here are pictures of two of the bulk feed stations in Maine. Wirthmore officials say that these stations make fresh feed readily available to farms serviced from each station. As illustrated, the company's distributors load their bulk trucks at the feed holding stations and then deliver to nearby farmers. The station on the left is at Fairfield, the one on the right at Thomaston.

Georgia Dealer Tells Of Broiler Growers' Feed Efficiency Gains

ATHENS, GA.—While workers in research laboratories continue their drive toward a more efficient broiler feed conversion, a report from the University of Georgia shows that the poultryman in actual production is not far behind in improving feed efficiency.

The university quotes figures from one Georgia feed dealer whose records show that average feed conversion of all his broiler growers, including the good and the bad, dropped steadily from 2.73 lb. of feed per pound of gain to 2.34 during the 17 months from January, 1956 to May, 1957.

"It is interesting to note," said Arthur Gannon, extension poultryman, "that there is an improvement in the feed conversion almost every month. Since May, 1957, they have gone even lower, but we don't have the figures."

The growers' records included average age marketed, average weight, average feed conversion and mortality. According to the university report, "these figures are complete and include the broilers grown out and marketed by all of this dealer's growers, including good lots and bad lots."

Average age at marketing remained about the same throughout the period —about nine weeks or nine weeks and one or two days. The average weight at marketing ranged from 2.96 lb. to 3.23 lb. The university report said apparently it required about three days longer during the hot weather to reach the same weight.

The mortality figure for May, 1957 (see table), results from a record of 213,492 birds marketed out of 213,400 started. The explanation is that extras sent out by hatcheries were not counted. For a more accurate mortality figure, the university suggests adding 2% to the mortality data listed.

The dealer's records follow:

BROILER AVERAGES
(One Dealer)

Month	No. head sold	Aver. weight	Aver. feed conv.	% Mortality
1956—				
January	172,782	3.02	2.73	2.4
February	199,459	2.96	2.68	2.3
March	213,283	2.97	2.62	2.0
April	186,122	3.07	2.63	2.2
May	224,803	3.00	2.55	1.7
June	232,053	2.99	2.54	2.0
July	189,340	2.99	2.54	2.1
August	240,843	2.97	2.53	3.4
September	231,321	3.14	2.49	2.2
October	271,496	3.15	2.49	1.0
November	184,341	3.05	2.44	1.7
December	192,670	3.01	2.44	1.1
1957—				
January	226,165	3.12	2.45	1.2
February	159,876	3.23	2.47	0.8
March	200,525	3.16	2.38	1.3
April	225,437	3.15	2.39	0.7
May	213,492	3.19	2.34	0.0

Microscopists to Meet In Canada in 1958

OTTAWA, CANADA—The American Association of Feed Microscopists will meet in Canada for the first time next year. The group's 1958 annual meeting will be held June 16-18 at the Chateau Laurier in Ottawa.

In connection with their meeting, the microscopists will visit the new laboratory facilities of the Canadian Department of Agriculture.

G. M. Barnhart, Missouri Department of Agriculture, Jefferson City, is secretary of the association.

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ADM Wins National Achievement Award

MINNEAPOLIS—The Archer-Daniels-Midland Co. this week received the 1956-57 United Shareholders of America annual meeting award for "meritorious achievement in the field of management-shareholder relationship."

United Shareholders of America, Inc., is a non-profit organization of stockholders in major corporations.

The accompanying citation to Thomas L. Daniels, ADM president, recognized the company's efforts to maintain and promote good management-shareholder relations, its policy of encouraging a broader and deeper base of stock ownership as a means of furthering the American economy and way of life, and ADM's "earnings and continuing dividends which reflect good management."

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reports
DAN TOTEL
LaSalle County, Illinois

"I was about ready to give up raising hogs . . . until I started using hog feeds fortified with Arsanilic Acid. This year, I've got the best crop of hogs I've had in 20 years!" reports Dan Totel of La Salle County, Illinois, who raises about 700 hogs a year.

"My hog problem was bloody scours", continues Mr. Totel. "We tried just about everything with poor results. Death losses were high.

"Then I read about Arsanilic Acid . . . and talked with an Ogle County, Illinois farmer who had wonderful results. So, I decided to switch to a good hog feed concentrate (35% protein) fortified with Arsanilic Acid and an antibiotic. The bloody scours stopped almost immediately. Within two weeks, you wouldn't know they were the same bunch of hogs. I highly recommend Arsanilic Acid to any hog raiser for fighting bloody scours and better feed conversion."

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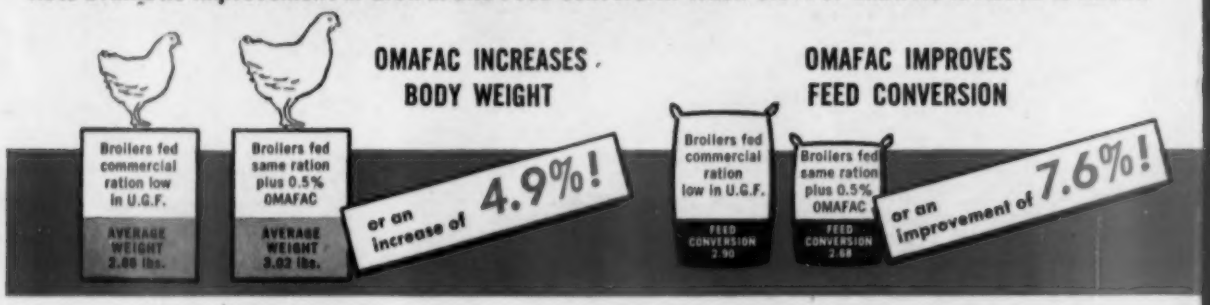
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**Data obtained by Gorman, Texas Farm Products Co., Nacogdoches, Texas.

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FEED PROPORTIONING

● By T. G. Burdsal
General Mills, Inc.

Engineer Analyzes Systems of Feed Ingredient Proportioning — Continuous and Batch; Manual, Semi-Automatic, Combination Type, and Automatic

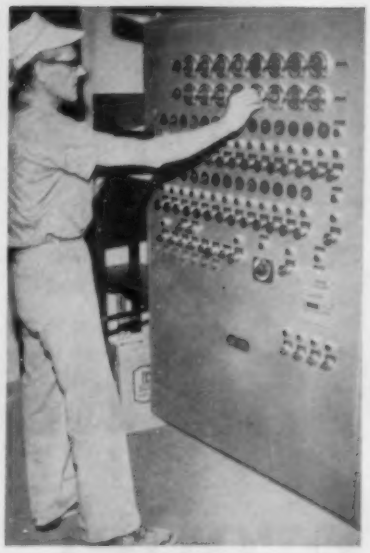
The proportioning phase of feed manufacturing is the only operation that has approached actual automation in the feed industry. This has become quite common and one seldom picks up an article on a new plant that doesn't talk of push buttons, electronic panels or automatic devices of some sort.

The automatic aspect is strictly centered in proportioning and must be applied to plants where most ingredients are stored in the bulk form. With the bulk requirement met there is surprisingly little advantage manpower-wise in automatic proportioning. Only a small amount of manpower is expended in this operation under any condition. This leaves the justification of automatic controls up to other elements in feed manufacturing. The real need for such controls lies in the ability to make quick feed changes, providing better accuracy and in improved plant volume potential.

Proportioning Systems: Formulation facilities may be divided into two types—namely, batch and continuous. It will be well to compare these two systems so that they may be viewed in the light of today's exacting requirements.

The continuous system is used in many mills that were built prior to the war or immediately thereafter. The principle of their design is simultaneously to meter ingredients from a number of bins by varying their individual rates of flow. The ingredients are collected in a conveyor beneath the feeders, and the sandwich of materials is mixed as it is conveyed to further processing or packing. In a batch operation the dry ingredients are actually weighed separately and blended together in a mixer. As many batches are manufactured consecutively as may be required to fulfill the demand for a particular formula.

Batch vs. Continuous: A batch system is frequently more accurate than the continuous type. This stems from the fact that batch ingredients are always weighed. In a continuous system the ingredients may either be fed by a series of volumetric feeders, which depend on a constant feed den-



The control panel at General Mills' new feed plant at Ft. Worth.

T. G. Burdsal

AUTHOR—In the accompanying article, Mr. Burdsal presents his analysis of the various types of feed proportioning in mills of different sizes. The author currently is assistant manufacfuring superintendent—in charge of feed manufacturing—for the Sperry Operations of General Mills, Inc., San Francisco. Previously he was feed plant superintendent for the company, manufacturer of Larro Feeds, at Belmond, Iowa.

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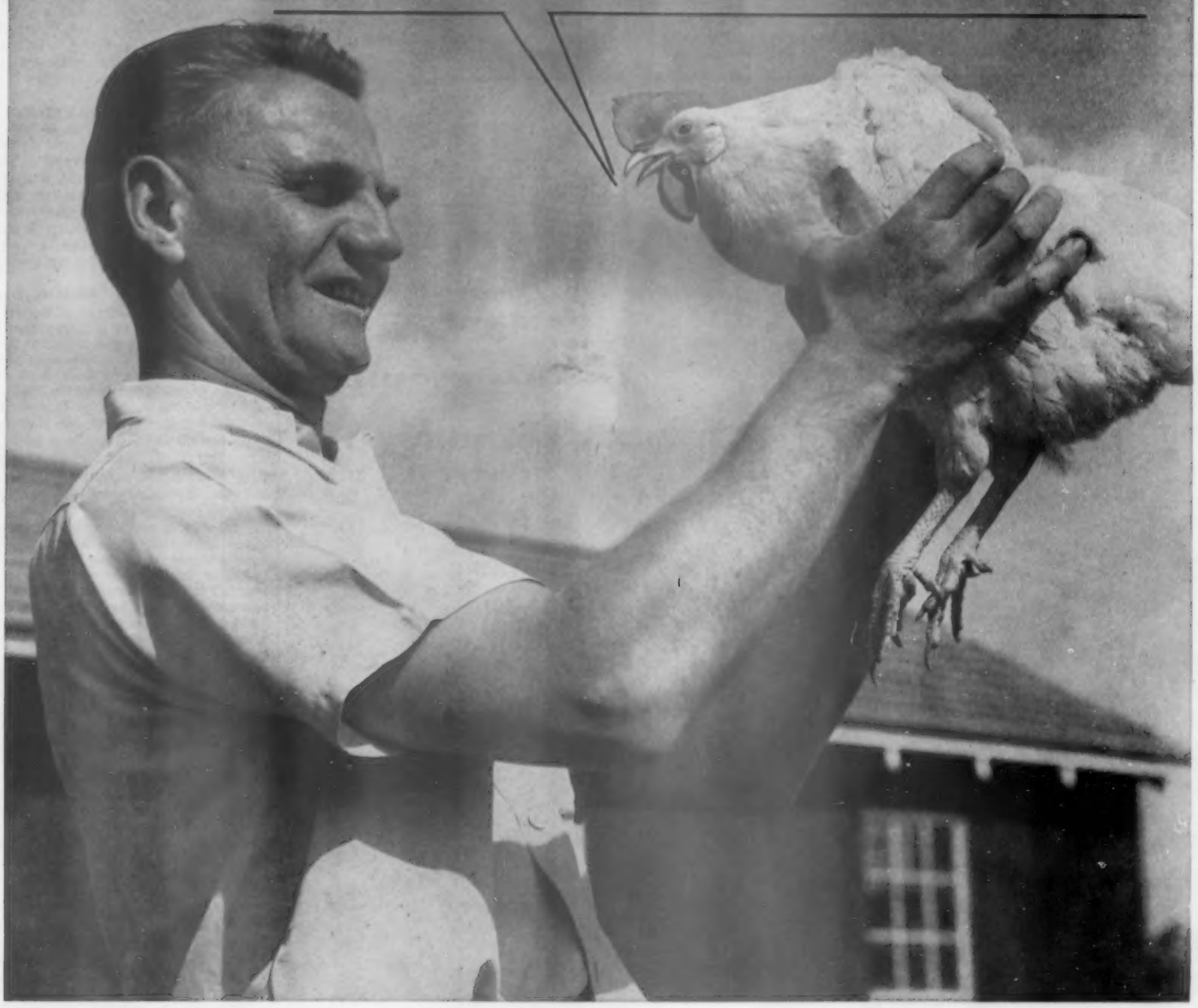

Snappy picture? That means Bemis Brand Design . . . to modernize your brand or, if you wish, create a new one. And it means Bemis' bright, crisp, multicolor printing . . . to get the most out of your brand. Put 'em together and you get the real payoff . . . *more sales.*

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sity, or a gravimetric feeder system using a weigh belt principle.

A continuous feeder system lacks flexibility. A batching operation may accommodate any ingredient from 0 to any % without affecting the plant capacity. On a continuous operation, however, a range span of about 30% is all that may be expected without decreasing plant capacity. On higher volume ingredients, it is frequently necessary to use two feeders in order to maintain maximum production. In addition, a comparable batch unit is less expensive, requires less maintenance, is self-checking, requires no setback at the start of a run and permits shorter runs for special feeds. A continuous unit has the advantage of a constant metered flow of dry ingredients to which may be added further liquid ingredients without additional binning and further flow measurement ahead of the liquid mixers.

Batch Proportioning: Batch operations may be considered in three categories. These would be manual, semi-automatic and fully automatic. The manual system is the most widely used type, and ingredients may be fed into the mixer exclusively from sacks or they may be fed from a combination of sacked and binned ingredients.

A push-button plant would be considered as a manual blending type where each ingredient is added to a hopper scale in a cumulative manner. This operation is performed by actuating a button or lever controlling the ingredient flow from any of a number of overhead bins into the hopper scale. The hopper scale dial is visually inspected as the ingredients are being added, and the operation is fully controlled by the man assigned to this work.

In a semi-automatic operation, an operator sets up the cumulative formula on weight selector dials on a control console. In this procedure the man is attached to the board only during the period that is necessary to set up the formula on the board. After this operation is performed, the batching will continue automatically until a different formulation is desired. Inasmuch as a man is not required in attendance at the board at all times, it is possible for him to perform other duties in the plant during these periods. This might be considered as one of the justifications for purchasing such a semi-automatic panel.

We might consider a fully automatic batching control as one where a man does not have to set up manually the formula on the board. Instead he may merely insert a punch-card into the machine, and it will automatically read the formula and produce a given feed for as many batches as have been previously determined. A formula change would merely involve taking out one punch-card and inserting another containing a different formula. For all practical purposes, an operator is not necessary under such a completely automatic system. A packer, a pellet mill operator, a foreman or even a plant superintendent could perform all of the duties concerned with this board as a part of his regular function.

I would say that manual systems should be used in plants up to 75 tons per eight-hour day. Above this point there would definitely be some justification for the installation of a semi-automatic system in order that the operator might be freed for other duties. The semi-automatic system would be feasible in plants manufacturing from 100 to 200 tons per eight-hour day. There would be some definite advantages in plants above 150 tons per day in going to the fully automatic system.

Semi-Automatic Systems: In this type of system one or more standard hopper scales are installed directly beneath a group of ingredient storage bins. Frequently it may be desirable to use more than one scale in order that the overall height of the building can be reduced and still maintain a convenient spouting or conveying arrangement from the bins to the scales.

In addition, such an installation permits a group of scales to weigh simultaneously and thus speed up this phase of the batching procedure. The other equipment concerned with an automatic system includes the scale dials and the operating control board. A special transmission device is contained within the dial head to transmit signals to the operating control panel.

Automatic controls are only as accurate as the consistency of material flow to the scale. It is imperative in all such systems that a constant rate of flow be attained in feeding. This becomes important in order that the amount of material between the top of the pile inside the scale and the feeding device from the bin may remain the same. It may be seen that when the control panel gives the impulse to stop the flow of an ingredient, the "in-suspension" material must be predicted. Once the board is set up and is operating on an automatic basis, the suspension material must remain the same during each batching cycle or an inaccuracy in some of the ingredients will result. It has been proven by tests that the most accurate means of guaranteeing a constant feed flow is through the use of motor operated screw feeders or drags. It may even be necessary to have a two-speed motor on some feeders to accommodate maximum and minimum quantities of the same ingredient as it varies between various formulas.

In setting up a panel for a specified feed, the operator would "tune in" the cumulative weights on the selector dials using a different dial for each ingredient. It would then be necessary to adjust the sequence selector switches to determine the order the ingredients will flow into the hopper scales. Generally speaking, it is most desirable to place the ingredients which have the greatest volume in the scale first. This reduces the amount of in-air material for subsequent ingredient additions.

It should be pointed out that all semi-automatic blending control systems require that the first batch in a sequence be handled on an inspection basis. When handled in this manner, the ingredient additions stop after each addition so that the dial scale

(Turn to PROPORTIONING, page 84)

Eastman's new Tenox BHT-Agricultural Grade has been especially developed to meet the needs of feed manufacturers. This new form of Tenox BHT is supplied as a free-flowing, non-dusting powder, in a particle size comparable to that of other feed components. It blends rapidly and homogeneously in mixing operations, and does not separate during handling or storage.

Although Eastman has had many years of experience in food antioxidants, we did not rely on this alone in developing Tenox BHT-Agricultural Grade. We talked to feed manufacturers, asking them about their storage problems... their blending machinery and methods... their preference in particle size. Only then did we complete the development work on Tenox BHT-Agricultural Grade, giving it the free-flowing, non-dusting, non-caking characteristics manufacturers wanted.

When you add Tenox BHT-Agricultural Grade to your feeds, you protect their sensitive vitamin content. At the same time, you help poultrymen improve pigmentation and guard their flocks against deficiency diseases such as encephalomalacia.

Since this form of Tenox BHT *is* new, be sure you specify "Agricultural Grade" when ordering. For additional information concerning Tenox BHT-Agricultural Grade, and how you can use it in the feeds you make, write to EASTMAN CHEMICAL PRODUCTS, INC., subsidiary of Eastman Kodak Company, KINGSPORT, TENNESSEE.

SALES OFFICES: Eastman Chemical Products, Inc., Kingsport, Tennessee; New York City, 260 Madison Avenue; Framingham, Massachusetts, 65 Concord Street; Cincinnati, 1813 Carew Tower; Cleveland, 13212 Shaker Square; Chicago, 360 North Michigan Avenue; St. Louis, 10 South Brentwood Boulevard; Houston, 1300 Main Street. **West Coast: Wilson Meyer Co.,** San Francisco, 333 Montgomery Street; Los Angeles, 4800 District Boulevard; Portland, 520 Southwest Sixth Avenue; Salt Lake City, 73 South Main Street; Seattle, 821 Second Avenue.

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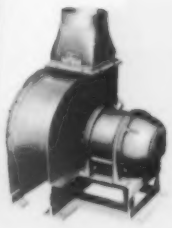
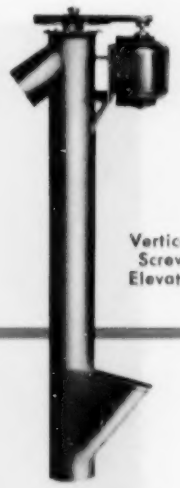
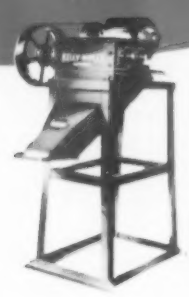


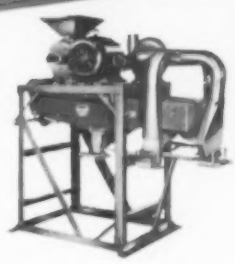
Grain Blower & Exhaust Fan



Vertical Screw Elevator

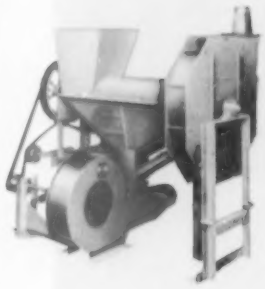


Cob Crusher for making Poultry Litter

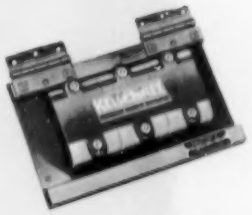


Corn Cutter and Grader with Aspirator

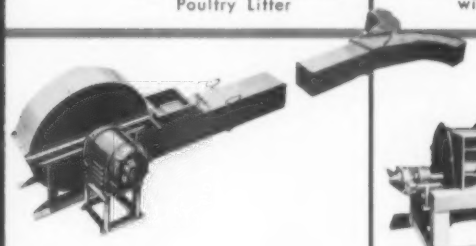
Vertical Feed Mixer ½ to 5 tons



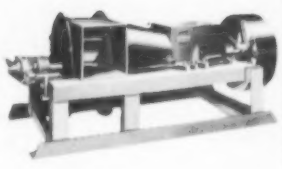
Corn Sheller with blowers for grain and cobs



Magnetic Separator protects mill machinery



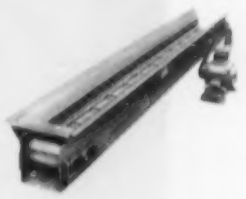
Forced Air Carloader with motor or belt drive



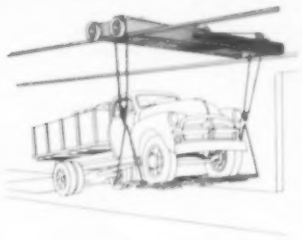
Regular and Pitless Corn Shellers

Twin Molasses Mixer

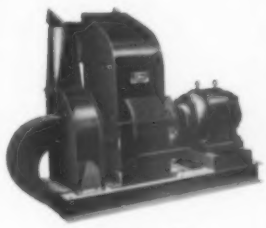
Corn Scalper with or without air cleaner



Chain Drag in double and single geared types

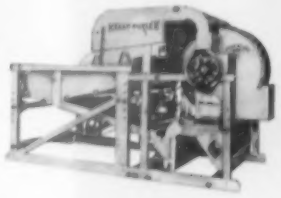


Electric Truck Hoist cuts handling costs

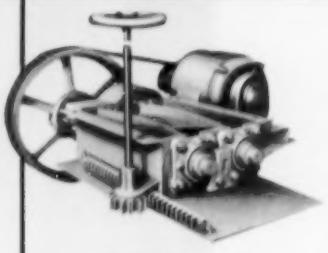


Hammermills 12", 16", 20", 24" sizes

Pit Auger or Ear Corn Conveyor

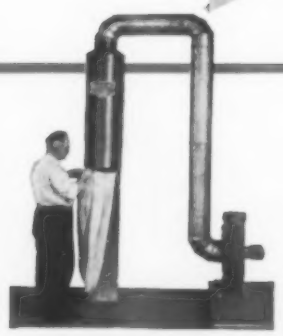


Gyrating Cleaner



Corn Crusher and Feed Regulator

Grain Feeder



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every **KELLY DUPLEX** machine is fully **GUARANTEED**

We will gladly ship you any Kelly Duplex machine on approval. If it is not completely satisfactory, you are free to return it within 30 days after arrival at destination, by prepaid freight, for refund of full purchase price. In addition, each Kelly Duplex is guaranteed against defects in material and workmanship for 90 days.

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- ☐ Vertical Screw Elevator
- ☐ Electric Truck Hoist
- ☐ Chain Drag
- ☐ Pit Auger
- ☐ Corn Sheller with Blowers
- ☐ Regular Corn Sheller
- ☐ Pitless Corn Sheller
- ☐ Gyrating Cleaner
- ☐ Corn Scalper
- ☐ Cob Crusher
- ☐ Corn Cutter and Grader
- ☐ Corn Crusher—Regulator
- ☐ Bucket Elevator
- ☐ Electric Bag Cleaner
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- ☐ Grain Blower
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KELLY DUPLEX
VERTICAL FEED MIXER

NEW MOTOR MOUNT

More versatile because it can be used on either side of the mixer—will accommodate motors of various sizes. More practical because it makes belt take-up easier.

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Gives you easy, instant access to mixing chamber. Provides an extra inspection window. Makes practical the use of hardened, bolt-on agitators. Available at extra cost.

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Designed to bring greater ease and efficiency to your sacking operation. Leaves no telltale dust deposits on mixer. Helps keep your mill clean.

NEW HOPPER BOTTOM and bearing housing.

Has bolted construction for easier access to working parts. Saves you time and money when maintenance is required.

It's no secret why—over the years—the Kelly Duplex Vertical Feed Mixer has been such a favorite with feed mill and elevator operators all over the country.

The Kelly Duplex is unconditionally guaranteed to mix more feed with the same power than any other machine on the market—and to produce a mixture so evenly and thoroughly blended that it will stand the most rigid inspection. A complete batch can be loaded, mixed and sacked in less than fifteen minutes.

Constructed of heavy, arc welded steel—the Kelly Duplex completely eliminates feed loss, is practically noiseless in operation, and is so liberally rated that owner after owner reports it will hold up to twice its stated capacity.

Now, with a new motor mount, a new inspection door, a new bagger, and a new hopper bottom and bearing housing—the Kelly Duplex Vertical Feed Miser is 4 ways better than ever before—and, more than ever before, is your one best mixer buy.

For top performance, lower maintenance, greater ease of handling and BIGGER PROFITS, you owe it to yourself to fully investigate this outstanding machine before you buy any feed mixer. Check and mail card today for full details.

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Dr. James W. Langston

JOINS HOFFMAN-TAFF—The new director of development for Hoffman-Taff, Springfield, Mo., and for its subsidiary, Hoffman Laboratories, Inc., is Dr. James W. Langston. His appointment was announced by Walter H. Hoffman, president of the firm in Feedstuffs, page 87, Nov. 2. At Hoffman-Taff, Dr. Langston will be in charge of an expanding product development department for the firm. Hoffman-Taff is a manufacturer of B-complex vitamins for the pharmaceutical and feed industries.

Grain, Feed Dealers Committee Reappointed

ST. LOUIS — Madison Clement, president of the Grain & Feed Dealers National Assn., has reappointed all members of the organization's arbitration appeals committee for the year 1957-58.

Members of the committee are: H. E. Sanford, Portland, Ore., chairman; W. B. Fox, New Orleans; F. J. Faber, Philadelphia; B. O. Holmquist, Omaha, and R. E. Barinowski, Augusta, Ga.

Association members are required to submit to arbitration all controversies over trade matters as between themselves and another member. An original arbitration committee of three handles the case, which can be appealed. The decision of the appeals committee, which is final, has seldom been appealed to the courts, and has never been upset.

The arbitration system of the association is the oldest in the U.S. The association set up trade rules in 1901, and arbitration procedure a year later.

The directory of the association, sent a number of times each year to all members, carries the arbitration rules and trade rules.

Members of this appeals committee are not changed from year to year, as are other committees. All appeals members are directors, and each serves as long as he will consent to serve.

MILL NEARLY COMPLETED

EGAN, S.D. — The Farmers Cooperative Elevator Co. here has announced that its new feed mill and bulk fertilizer warehouse are nearly completed.

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Sheep Advisory Group Urges More Research

WASHINGTON — Stronger, more comprehensive studies of sheep production and utilization of meat and wool were favored by the U.S. Department of Agriculture's sheep and wool research and marketing advisory committee at its recent meeting in Washington.

The committee agreed that this program, along with expanded studies on the quality and yield of lamb meat as influenced by production practices, mechanical processing of chemically modified wools, development of wash-and-wear wool garments, and improved serviceability of wool floor coverings, were among the top needs in sheep and wool research.

Established under the Research & Marketing Act of 1946, the committee meets annually. The group re-elected as its chairman John H. Breckenridge, sheep raiser of Twin Falls, Idaho.

In regard to the sheep production and utilization studies, the committee noted that work should be initiated on additional breeds at various geographic locations and should include lamb production of ewes as well as current information on fleece and body traits. Investigations to determine the interactions between genetic and environmental factors should be strengthened, it stated.

Specific lamb meat quality studies that the committee favors include work on the influence of breeding, feeding, management, sex, market finish and other production factors on the quality, yield and chemical and physical properties of lamb meat, the yields and composition of edible meat in carcasses and cuts, and characteristics of flavor, tenderness and juiciness.

Among other areas of new or expanded research considered by the committee as meriting high priority attention included: (1) Studies to improve present methods of measuring wool quality by determining the incidence of color fibers and relating the strength of fiber to visual characteristics. (2) Intensified research to determine the variations in wool prices received by producers as influenced by yield, fineness and staple length. (3) Improvements in statistical and reporting services for wool marketing. (4) Improvement in the educational program on preparing wool for market, with emphasis on demonstrations of the value of culling sheep.

NEW MANAGER NAMED

HANSKA, MINN.—Elroy Schroeder, St. James, Minn., has been named manager of the Farmers Grain & Feed Co. here to succeed Fred A. Bjornberg, who resigned recently. Mr. Schroeder had been manager at St. James for 24 years.

For a Superior Turkey Feeding Program

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REDUCE FLOCK SERVICE WORK

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Multi-Chemical, Broad Spectrum Feed Medicant

Starter feeds containing POLYSTAT help growers get faster gains on less feed per pound of live weight and also aid in the prevention of . . .

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Polystat promotes sound development, improved coloring, faster feathering and increased market values.

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For Prevention of Blackhead . . . For Better Finish

Change to growing rations containing Histostat fed at 8-10-12 weeks, or when poults go on range to prevent significant losses from Blackhead! Proven by thousands of growers on millions of turkeys . . . Histostat is safe—causes no setbacks; *palatable*—turkeys like it; economical—two birds saved more than pays for treating 100 with Histostat.

It's easy to formulate a superior 2-step turkey feeding program with Dr. Salsbury's Polystat and Histostat . . . it's even easier to get all the facts regarding these time proven products. Simply write, wire or phone and Dr. Salsbury's Laboratories will give prompt attention to your inquiry, without obligation, of course.

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nation-wide service to the feed industry

Handling Sacked Feeds

A Lot of Things Add Up To Efficient Bag Handling At Iowa Company's Plant

By ROGER S. BERGLUND
Feedstuffs Managing Editor

What's the key to success in a materials handling system for sacked feeds?

Perhaps no one would claim that there is any one key. However, some clear evidence of how a lot of things can add up to better and more efficient bag handling is found in a Des Moines, Iowa, feed plant—the plant of Foxbilt Feeds.

The company and its plant supervisors have a number of techniques which they feel are important in eliminating bag breakage, assuring an attractive package and holding down on handling costs. Put them all together and you have a smooth handling, warehousing and loading out operation.

In its ingredient handling and production operations, the Foxbilt plant has a number of other interesting features, too. More about some of those later.

All Feeds Are Sacked

All finished feeds at the Foxbilt plant are sacked and are packaged in 50-lb. multiwall paper bags. The feeds are moved from the mill to the warehouse and from the warehouse to cars or trucks on pallets by a forklift truck system.

The area served by Foxbilt is roughly that within a radius of 300 miles of Des Moines. The company specializes in and makes "Pre-Mixes" for on-the-farm mixing with home-grown grains or, in some cases, free-choice feeding with the farmer's grains. These "concentrates" or "balancers" for local grain are high in protein and other important nutrients and fortification, and are used in relatively small amounts with a given amount of grain.

Edwin L. Fox, president, said that the company's philosophy on this type of feed is this: "We thoroughly believe it is economically sound and highly practical for the farmer to use a basic Pre-Mix, containing only the essential minerals, vitamins, antibiotics and proteins, which is entirely devoid of any part of the grain he grows . . ."

Sectional Mills

Also manufactured at the Des Moines mill are Foxbilt Pre-Mixes for use by sectional manufacturers and mixers operating under franchise. These franchised mills, located in various parts of the Foxbilt area, make Foxbilt brand "complete feeds"—starting, growing and fattening and finishing feeds for all livestock and poultry.

Both the Pre-Mixes for on-the-farm use and the complete feeds are sold through the company's dealer organization.

The only feeds made in the Des Moines mill are the Pre-Mixes for home mixing or for the sectional mills. All of these products, including both meal and pellets, are packed and sold in 50-lb. bags.

In addition to its feed division, Foxbilt, Inc., operates the Ames In-Cross division, providing hybrid chickens and swine. Chicks hatched from eggs from the company's breeding program are sold by hatcherymen throughout the U.S. and several foreign countries.

The company also has developed Ames In-Cross meat-type hogs, and breeding stock is sold and leased to farmers in the same midwestern area served by the feed division, which includes Iowa and parts of surrounding states. Foxbilt is recognized as the largest single owner of in-cross swine.

The company is now operating and expanding a lease program under which gilts and/or boars are leased to farmers getting into meat-type hog production.

Also put out on "lease" in a relatively new program are Ames In-Cross chicks which the farmer raises and keeps for egg production. The farmer does not purchase the chicks but "leases" them for a certain fee. When the old hens are marketed after 18 months, the farmer receives any amount above a specified figure set for the old birds.

As noted above, the president and chairman of the board of Foxbilt, Inc., is Edwin L. Fox, son of the founder of the company, the late E. Frank Fox.

The company officer in charge of feed production, as well as purchasing, is Marion S. Diercks, a vice president. Z. C. (Zip) Zeller is plant superintendent, and Robert Barnett is production superintendent. The feed

There's an art to good piling of pallet loads of feed. Z. C. Zeller, plant superintendent at Foxbilt, offers this advice: "Pile pallets—not bags. Bring the pallet load straight down and set it down straight." As shown here, accurate fork lift truck operation results in neatly stacked piles. The finished feed warehouse will hold 100 carloads or more, with pallet loads stacked five high.

Conferring at the plant on a production problem are, left to right, Z. C. Zeller, plant superintendent; Robert Barnett, production superintendent, and Marion S. Diercks, vice president in charge of production and purchasing.

This is an aerial view of the Foxbilt plant north of Des Moines. On the far left are nutrition research buildings. To the left of the white, steel-paneled mixing tower are the finished feed warehouse and covered truck loading dock. The large ingredient warehouse is on the right.

Most of the feeds, as shown in the first photo, are packed on a Bemis gravity packer, and the bags then drop down a chute to the first floor, where they are loaded onto pallets—1 ton to the pallet. As illustrated in the second photo, an important point in efficient handling of sacked feed is fast but careful stacking of feed on pallets.

A canvas "awning" between the warehouse and a boxcar protects feed being loaded into cars.

The mixer operator controls the entire mill. Everything is interlocked and timed from an explosion-proof control room.

A cut-down bag piler is used to load feed from pallets into trucks. This portable conveying unit is said to replace one to two men in loading operations. The second photo shows one of the techniques used to help eliminate damage to bags while in rail transit. Corrugated paper is used in lining cars, and it is fastened to the wall with a stapler.

plant, along with nutrition research facilities, is located north of Des Moines.

The Foxbilt Pre-Mixes, the company points out, contain no grain or grain products, and the Des Moines mill has no grain processing facilities. Except for soybean oil meal, all ingredients are received and handled in bags, including both trace mineral and vitamin premixes that are produced at another point and brought to the feed mill in bags to be included in each batch.

Sacked ingredients are stored in a large warehouse on one side of the mixing tower, and the finished feeds are kept in a 60-by-200 ft. warehouse on the other side of the mill.

Feed Handling

The more than 100 tons of "Pre-Mixes" or balancers made each day go from the packers on the second floor of the mill down a chute to a steel table on the first floor. There, the 50-lb. bags are stacked on pallets —1 ton per pallet—for movement to the finished feed warehouse by fork truck.

Mr. Zeller said it has been determined that the pallet and fork truck system of handling is the best for the Foxbilt operation, and from the packaging units on the second floor to the loading out of the bags of feed, he and his associates have installed numerous procedures to assure efficient handling.

The bags which are used are 180-lb. basis weight, with four walls—two 40's and one 50 of natural kraft and one 50-lb. white outer wall. Mr. Diercks said it is felt that this heavier than normal bag is justified because of less breakage or damage than might otherwise be expected.

The feed is put on 4-by-5-ft. reversible wood pallets. Two extra stringers, one on each side of the center stringer, are put in the pallets. Both top and bottom of the pallets are solid.

"These things mean a lot less pallet deterioration," said Mr. Barnett. "We figure we get 10 times the life from a pallet than would otherwise be the case."

The 1-ton-per-pallet load, Mr. Zeller said, gives an automatic count and makes for easier control of inventory and filling of orders.

All finished feed goes into the warehouse, and then orders going out by rail or truck are filled from the warehouse stock. This system, along with the way the feed is placed in the warehouse, makes possible longer production runs and in other ways works out best for the Foxbilt mill.

Warehouse

The warehouse has a 16-ft. clearance to the ceiling, and there are no roof support poles in the warehouse area.

In the warehouse, pallet loads are stacked five high, and Mr. Zeller puts a lot of emphasis on employing and training good fork truck drivers. He wants to know: Can they really stack, can they get in and get out quickly? His program, as the accompanying pictures show, has paid off in neat, well-stacked pallet loads.

"You have to pile pallets, not bags," he points out. "The driver has to bring the pallet straight down and set it down straight."

Except for certain types of feed, a row of a particular feed extends seven pallets out from the warehouse wall to the aisle. The stocks are rotated, and while one row is being emptied to fill orders, an adjoining row of the same type of feed is being filled from the production line. When a row is empty, the new production goes there, and outgoing feed is taken from the adjoining row.

The inventory control and production scheduling systems are a joint effort between Mr. Diercks in the downtown office and Mr. Zeller and Mr. Barnett. Each day Mr. Diercks goes through the finished feed and ingredient warehouses for a quick check on the stocks on hand. With this information and information on orders, he and the superintendents at the mill are constantly aware of requirements in planning and carrying out of production and filling of orders. This close liaison between downtown headquarters and the plant has paid off, Mr. Zeller noted.

Loading Out

Outgoing feeds are loaded into cars at car spots along one side of the warehouse. On the other side is a completely covered truck loading dock which can handle three trucks at a time.

Pallet loads are taken by fork truck into the cars or, where possible, trucks, and the bags are loaded manually from the pallets. Take-it-or-leave-it pallets are not used.

For loading trucks that fork trucks cannot get into, the plant uses a bag piler which has been cut down to move bags from the pallet into a truck. This portable conveying unit

As shown in the first picture, a corner sign, resembling a highway traffic sign, is placed at intersections of warehouse aisles. This is a reminder to lift truck operators not to get within damaging distance of stacks of feed. Feed is put on 4-by-5-ft. wood pallets, solid top and bottom. (See second photo.) As illustrated, the pallets have two extra stringers, strengthening the pallet and greatly extending its life.

Used ingredient bags are baled in this hydraulic press which Foxbilt constructed, and the bales of paper are then sold.

The picture on the left is a view of part of the large ingredient warehouse which will hold some 2,000 tons of materials. The second photo shows ingredients, except for bulk soybean meal, for a batch of feed. Batches are made up in the ingredient warehouse by placing a specified number of bags of various ingredients on a pallet.

It may be interesting to note that all fire-fighting equipment at the Foxbilt mill is kept on a truck in one place. In event of fire, the equipment can be quickly pulled to the scene, and it is not necessary to run all over the mill gathering extinguishers.

replaces one or two men in loading operations, Mr. Barnett said. Feed is loaded at a rate of a ton a minute by a fork truck operator and two men handling bags.

Corrugated paper is used in lining cars carrying finished feed, and it is fastened to the walls with a stapler. This, said Mr. Zeller, has helped to eliminate bag damage during shipment.

There are some other things, too, which have helped bring Foxbilt the reputation of having one of the leading bagged feed handling operations.

For example, there are things like a corner caution sign, resembling a traffic sign, which is placed at corners of stacks of feed in the warehouse. This serves as a not-so-subtle reminder to fork truck drivers not to get too close to the bags at aisle intersections.

Canvas "awnings" which fold out between the warehouse and a boxcar are used to protect feed from the weather when it is being loaded into cars.

Housekeeping

Actually, it isn't only its finished feed handling system for which the Foxbilt plant is noted. Its housekeeping is considered one of the outstanding features. The dust collector systems that are used, plus even a vacuum cleaner, mean there is no dust to be seen in the mixing tower; and all of the interior and the equipment are painted a bright white or green.

As a matter of fact, the white walls and pipes and equipment on some of the floors make the place look somewhat like some of the rooms you would find in a hospital.

Except for soybean meal, all ingredients are received and stored in bags on pallets in the 200-by-157-ft. ingredient warehouse. Batches are made up in the ingredient warehouse by placing the specified numbers of bags of the various bagged ingredients on a pallet. The fork truck operator takes a batch to one of two dump sinks, where these materials are dumped. Bulk soybean meal is measured by remote control into a batch.

After being elevated and scalped, a batch goes into a holding bin and then into one of four 2-ton Burton mixers. Additional processing includes molasses mixing or pelleting.

Control Center

The entire plant is controlled by the mixer operator. The mixing is controlled either manually or automatically on a special control panel designed to meet Foxbilt's needs. The equipment operations are interlocked and timed from an explosion-proof control room.

Most of the feed is packaged with a Bemis gravity packer. From the packing station, the bags drop down a chute to the first floor for palletizing and movement to the warehouse.

In connection with mixing operations, there is another interesting feature—the method of disposing of used paper bags which held ingredients. The company built a hydraulic press, and this is used to make 200-lb. bales of paper. The paper is then sold.

Record System

To help keep the entire plant running smoothly and as efficiently as possible, Mr. Zeller and Mr. Barnett have an extensive record keeping system. These records show how operations are proceeding and are a means of quickly detecting any problems so that corrections can be made.

One of the records is a production sheet on which information on mixing operations is recorded as the mixer operator goes through the day making various types of feeds. The other sheets cover such things as molasses pellets, a Saturday maintenance schedule and a daily report which shows production of different types of feed, materials handled, loading, feed delivered over the road, cars unloaded, hours worked, sick hours paid, vacation hours paid and total hours. This daily record shows at a glance the activities performed in a given day and the hours required.

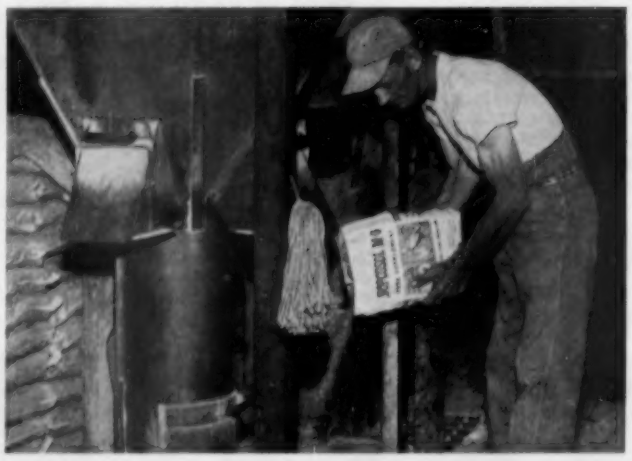
The production department also fills out a weekly record which shows hours worked; wages paid; tons produced; cost per ton of production; man-hours worked per ton of production; tons handled; tons sold; tons produced, handled and sold; man-hours worked per ton produced, handled and sold; and accumulated wages paid and tonnage produced to date.

Mr. Diercks and Mr. Zeller pointed out that this and other records provide a constant picture of how efficiently production and handling operations are being carried out. The information shows just how much it is costing to make a ton of feed, and it is valuable in detecting any trouble spots.

Mr. Zeller said that an effort is made in the direction of definite ad-

"We, too, went through a period of being a sort of animal pharmacy"

says Ellis Brubaker, treasurer Brubaker Elevator Co.



Nothing complex about this delicate mixing operation! Pearl Wolfe, Brubaker employee, pours one bag of Nopcosols into a ton of feed, and the job of supplementation is done.

Bob Wyman, Nopco Sales veteran, gives Clyde Yoesting, Brubaker's feed mixing expert, a quick rundown on the benefits of a truly modern supplement, Nopcosol M-7.

"In the early days we had to buy each item separately—each vitamin, mineral, medicinal, and other supplementary ingredient. We had to weigh each of these items into the feed with great care and, because items like vitamin A are perishable, we had to deliver feed at a rate that would permit our customers to use it up soon after it was manufactured.

"Now we supplement feed with Nopcosols. In case you're not familiar with that word, every Nopcosol® is a complete supplementary package—one bag is enough to fortify one ton of feed. They contain Micratized® Vitamins A & D—so absolutely stable that I can guarantee the level of vitamin potency until the mash reaches the birds' gullets. They also contain healthful amounts of the B vitamins, several others such as E and K when called for, antibiotics when necessary and, lastly, trace minerals.

"We began using Nopcosols 3 years ago. Our delivery and storage problems are over, and results in both turkey and poultry feeding are extremely successful."

NOPCO CHEMICAL COMPANY
Harrison, N.J., and Richmond, Calif.

NOPC

COD LIVER OIL
Refiner and Exporter of
Medicinal and Non-Destearinated
Cod Liver Oil USP
and High Vitamin Oil.
BERNH. PETERSEN
Established 1907
REYKJAVIK—ICELAND

Marion MIXERS
ELIMINATE GUESSWORK IN MOLASSES MIXING!

Complete accuracy in Molasses mixing bag after bag!
One mixer For All Your Mixing Needs.
Mixes Both Dry and Molasses Feed.
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RAPIDS MACHINERY CO.
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vance scheduling of production, with certain items to be made in certain amounts on certain days. Actual production, depending on sales and other situations, may vary from the schedule, but the scheduling provides a basis for checking on operations and a goal to be sought.

The record system, along with other plant procedures, is a further indication of the systematic way in which the Foxbilt plant is operated. The precision of the whole operation is reflected in the neat appearance of the mill; and, in handling of finished feeds, it is evident in the efficient way that bags are moved, stored and loaded out.

ALFALFA SILAGE TEST

URBANA, ILL.—An experiment on wintering steer calves at the University of Illinois on alfalfa silage and corn silage showed little difference in whether more shelled corn was added to the alfalfa silage at ensiling time or at feeding time.

Cyanamid Announces Dairy Contest Judges

NEW YORK—Executive officers of the leading dairy cattle breed associations have accepted invitations to serve as judges for American Cyanamid Co.'s $25,000 "Win a Dairy Star" contest.

The judges will award 50 purebred heifers to contestants who submit the most original and interesting completions to "I like dairy farming because . . ." in 25 words or less.

The contest will enable the winning small dairy farmers to bring purebred bloodlines into their stock. It is also aimed at drawing attention to the high cost of mastitis ($225 million annually, according to USDA), and to the scientific means available to combat the disease.

The judging panel will consist of Fred S. Idtse, secretary, Brown Swiss Cattle Breeders Assn., Beloit, Wis.; Robert D. Stewart, secretary-treasurer, American Guernsey Cattle Club, Peterborough, N.H.; Robert H. Rumler, executive secretary, Holstein-Freisian Association of America, Brattleboro, Vt.; J. F. Cavanaugh, executive secretary, American Jersey Cattle Club, Columbus, Ohio.

The Ayrshire Breeders Assn., Brandon, Vt., indicates that its incoming executive secretary will act as a judge after assuming office in December.

Forty six of the country's outstanding dairy cattle breeding farms were selected as sources of supply for the prize purebred heifers. Winners will be able to choose from one of the five breeds.

Dairy farmers can enter by purchasing a special package of five syringes or tubes of Aureomycin mastitis suspension or ointment from regular suppliers of animal health products. The farmer then will receive an official entry blank plus a free tube or syringe of the Aureomycin compound. The contest continues through Jan. 31, 1958.

John C. Preece

LILLY REPRESENTATIVE — John C. Preece has been appointed an agricultural representative for Eli Lilly & Co. in the south central states, according to O. B. Swearingen, sales director of the Lilly agricultural and industrial products division. Mr. Preece will headquarter in Dallas to replace A. G. Rogers, who has been transferred to Atlanta. He will call on feed manufacturer buyers of Stilbasol, Hygromix and other agricultural products. Mr. Preece graduated from Iowa State College in 1950 with a B.S. degree in animal husbandry. Before joining Lilly he held territory sales management positions with Nutrena Mills, Inc., and Arcady Farms Milling Co.

Poultry Regulations Described in Handbook

WASHINGTON — Government inspection and grading of poultry are described in a new 26-page bulletin issued recently by the U.S. Department of Agriculture.

The publication is designed to inform consumers, producers and marketing agencies about operation of the federal and federal-state poultry grading and inspection programs and the function of these programs in the marketing of poultry.

Prepared by the poultry division of the Agricultural Marketing Service, this bulletin explains the need for nationally uniform regulations for processing and standards for grading of poultry and poultry food products.

The basic principles governing poultry inspection described in the bulletin are applicable to beth the voluntary inspection program and the compulsory inspection program to be carried on in connection with the Poultry Products Inspection Act.

Single copies of Poultry Grading & Inspection, Agriculture Information Bulletin No. 173, may be obtained from the Office of Information, U.S. Department of Agriculture, Washington 25, D.C.

"I played around with mixing my own supplements for nearly a year"

says Walter Bevan, turkey raiser and Brubaker customer

"I thought I could mix my own vitamin supplements and fortify my own feeds. So I bought the ingredients from Brubaker's and prepared dry supplements for my feeds and liquid ones for the turkeys' drinking water.

"It wasn't long before my birds developed troubles.

"They didn't feather right. We got too many loose droppings. We had a lot of bowlegged turkeys. The mortality rate was ruinous.

"Added to all these, my feed was costing me too much.

"Last year I switched to Brubaker's turkey feed fortified with Nopcosol M-7. My troubles cleared up. Birds feathered right. No more hock disorder. And where before my birds were so poor that they couldn't stand a good rain at 8 or 10 weeks, now I lose none on rainy days, not even 6-week-old poults!

"I wish I had taken Brubaker's advice a year earlier. They were ready for me with the right ingredients, but I had to do it my way first."

Hotel-size turkeys! Walter E. Bevan and his son, Walter A., examine one of the 3200 birds they have on range. The total number of birds averages 10,000, and the toms dress out at an average of 26.1 lb. at 30 weeks.

Good feathering shows on these 3-week-old poults. Before starting on his Nopcosol program, Walter Bevan's 8- and even 10-week-old birds couldn't stand a brisk rain.

50 Years NOPCO

Basic producers of Micratized® Vitamins A and D, niacin, calcium pantothenate, choline chloride, and other products

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McCabe Grain Company Limited

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Victoria Products and Grain (overseas agents) Ltd.

CONVENTION CALENDAR

New Listings

For the convenience of readers who scan the Convention Calendar regularly for new listings, those added to the column in the current week appear ahead of the ones which have been entered previously. The following week they will be moved to their proper slot where they will remain until the event is held.

• • •

Dec. 4—Ontario Retail Feed Dealers Assn.; King Edward Hotel, Toronto; sec., Murray H. McPhail, 69 Yone St., Toronto, Ontario.

Feb. 6-7—New Hampshire Poultry Health Conference; University Memorial Union Bldg.; chm., Richard Warren, extension poultryman, University of New Hampshire, Durham, N.H.

April 23-24—Texas Feed Manufacturers Assn.; Baker Hotel, Dallas, Texas; sec.-treas., Ben E. Schmitt, 528 Bewley Bldg., Ft. Worth, Texas.

April 25-26—Texas Grain & Feed Dealers Assn.; Baker Hotel, Dallas, Texas; sec., Ben M. Ferguson, 614 Meacham Bldg., Ft. Worth, Texas.

June 9-11—Association of Southern Feed & Fertilizer Control Officials; Heart of Atlanta Motel, Atlanta, Ga.; sec.-treas., Bruce Poundstone, University of Kentucky, Lexington, Ky.

June 16-18—American Association of Feed Microscopists, Chateau Laurier, Ottawa, Canada; sec., G. M. Barnhart, Missouri Department of Agriculture, Jefferson City, Mo.

Oct. 14-16—Association of American Feed Control Officials; Shoreham Hotel, Washington, D.C.; sec., L. E. Bopst, University of Maryland, College Park, Md.

1957

Nov. 17-18—Tennessee Feed Manufacturers Assn.; Peabody Hotel, Memphis, Tenn.; exec. sec., W. H. Levine, 200 Baxter Bldg., Nashville, Tenn.

Nov. 20-22—Midwest Feed Production School; Municipal Auditorium, Kansas City; sponsored by Midwest Feed Manufacturers Assn.; exec. v.p., Lloyd S. Larson, 20 W. 9th St. Bldg., Kansas City 5, Mo.

Nov. 22.—Rutgers One-Day School for Poultry Servicemen in Feed and Allied Industries; Agora Hall, Rutgers University, New Brunswick, N.J.; chm., Prof. C. S. Platt, Poultry Department.

Nov. 22-27 — North Carolina Feed Manufacturers Assn. and allied group convention-cruise to Nassau; chm., W. G. Crawford, Goldsboro Milling Co., Goldsboro, N.C.

Nov. 25-26—Western Grain & Feed Assn.; Hotel Fort Des Moines, Des Moines, Iowa; sec., Robert Skinner, 928 Des Moines Bldg., Des Moines 9, Iowa.

1958

Jan. 6-7 — Kansas Formula Feed Conference; Kansas State College, Manhattan, Kansas; chm., Prof. F. W. Atkeson, Department of Dairy Husbandry.

Jan. 7-9—National Turkey Federation; Keil Auditorium, St. Louis, Mo.; sec., M. C. Small, P.O. Box 60, Mt. Morris, Ill.

Jan. 10-11 — Kansas Seed Dealers Assn.; Hotel Broadview, Wichita, Kansas; sec., O. E. Case, 600 Wiley Bldg., Hutchinson, Kansas.

Jan. 19-21—Indiana Grain & Feed Dealers Assn.; Hotel Claypool, Indianapolis, Ind.; sec., Fred K. Sale, Board of Trade Bldg., Indianapolis 4, Ind.

Jan. 21-22—N.D. Poultry Industries Convention; Elks Club, Fargo, N.D.; chm., B. J. Duke, Poultry Improvement Board, Bismarck, N.D.

Jan. 22-25—Boston Poultry Show; Mechanics Bldg., Boston, Mass.; sec., Alfred Van Wagenen, Northeastern Poultry Producers Council, 10 Rutgers Place, Trenton, N.J.

Jan. 23-25—New Mexico Grain & Feed Dealers Assn.; Town House Motel, Santa Fe, New Mexico; asst. sec., Parley G. Jensen, P.O. Box 616, Albuquerque, N.M.

Jan. 27-29 — Southeastern Poultry & Egg Assn.; Municipal Auditorium,

(Continued on page 35)

Jack Chappell

PLANT MANAGER — Central Soya Co., Inc., and its feed division, McMillen Feed Mills, announce the promotion of Jack Chappell to the position of plant manager for the company's recently announced Iowa feed plant in Des Moines. Mr. Chappell joined Central Soya in 1956 as personnel director of the Decatur, Ind., plant. He was previously associated with the International Harvester Co. in Ft. Wayne and with the Modine Manufacturing Co., LaPorte, Ind. He is a graduate of Purdue University with a major in industrial engineering.

DORSEY Bulkmaster

(formerly built by Highway Equip. Co.)

Self Unloading BULK FEED AND MATERIAL BODIES AND TRAILERS

AIR and AUGER UNLOADING MODELS FOR EVERY PURSE AND PURPOSE

A few of the features that make Bulkmasters the leaders

TROUBLE-FREE CONVEYORS are 36" wide and utilize belt-over-chain principle for positive drive with no slipping. Variable speed.

QUIET AUGER OPERATION: Special hanger bearing midway in pipe prevents "whip", assures longer, more efficient service.

COMPLETELY HYDRAULIC: All Bulkmaster conveyors and auger assemblies are fully-hydraulically-operated for speed and safety.

ONE-MAN OPERATION: All controls conveniently grouped.

CONSTRUCTION: Full electric welding . . . precision-built like the famous Dorsey Trailers!

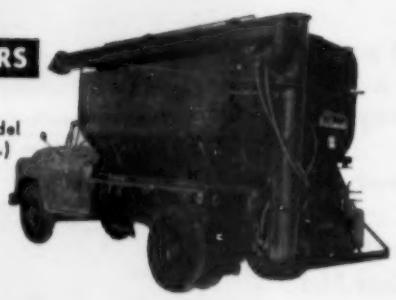
BULK BODIES AND TRAILERS

Air Unloading MODEL BT-A

(Truck-mounted Model B-A also available.)

Auger Unloading MODEL B-H

(Trailer-mounted Model BT-H also available.)



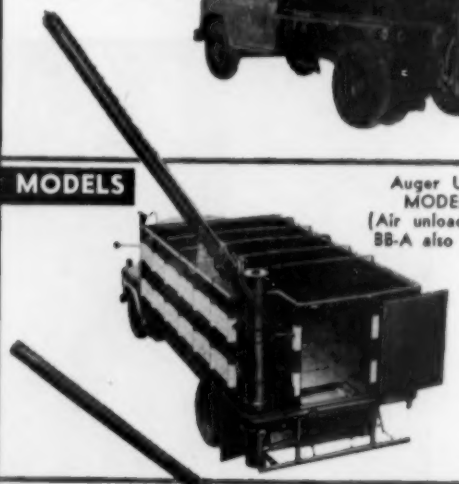
COMBINATION (Bag and Bulk) MODELS

Air Unloading MODEL BBT-A

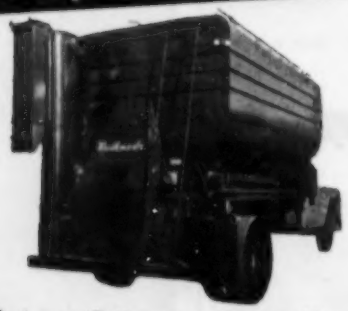
(Auger unloading Model BBT-H also available.)

Auger Unloading MODEL BB-H

(Air unloading Model BB-A also available.)



"HI-MOLASSES" Dairy Feed Body



Exclusive oscillating conveyor speedily unloads high-molasses content feeds as well as grain.

ECONOMY SPECIAL!

MODEL F-M

Tops in efficiency and quality and at its low-budget price.

DORSEY **DORSEY TRAILERS ELBA, ALABAMA**

This is how vitamin E comes to you

This is the supplement that makes the vitamin E content of your finished feeds a sure thing. With the vitamin in the stable *d*-alpha-tocopheryl acetate form, it holds its potency through heat, long storage, and the effects of other feed ingredients.

Myvamix® Vitamin E is the supplement that's as easy to handle as anything in your mill. We put the vitamin on a dry, non-dusting soy meal base that mixes evenly throughout your feed without fuss or bother.

It's the supplement you can count on for a consistent 20,000 International Units of Vitamin E per pound. And the *Myvamix* protection costs only a few dimes per ton of your product.

For information or a quotation on Myvamix Vitamin E Feed Supplement, call the distributor nearest you, or ***Distillation Products Industries,*** Rochester 3, N. Y. Sales offices: New York, Chicago, and Memphis • Charles Albert Smith Limited, Montreal and Toronto.

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producers of

Myvamix ***vitamin E***

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Again...
from *Borden*...
another great forward step in
POULTRY NUTRITION!

fermacto 400

Here it is . . . Borden's **FERMACTO 400** . . . another great forward step in poultry nutrition . . . *another* product of Borden's continuing research!

Borden's **FERMACTO 400** is a farm-tested, straight blend of fermentation factors of proved potency which, when added to your feeds at recommended levels, can produce up to *seventy pounds* more meat from every ton of feed used.*

The growth-stimulating power of Borden's **FERMACTO 400** has been established through practical feeding tests, in every one of which it consistently out-performed previously accepted formulas.

Your customers judge your feeds by only one standard... *net return on money invested.* With Borden's **FERMACTO 400** in your feeds, you can *get* and *hold* more business through improved livability, faster growth and maximum feed efficiency.

Get the full story now! *Ask for proof of how your feeds can be made better.*

*Computed October 15, 1957

THE BORDEN COMPANY
FEED SUPPLEMENTS DEPARTMENT
350 Madison Avenue, New York 17, N. Y.

Gentlemen:
Please send me complete information about Borden's **FERMACTO 400** at once.

Name.....
Firm Name.....
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City & State.....

Borden IS BASIC IN FOOD AND FEED RESEARCH

Atlanta, Ga.; headquarters hotel, Dinkler Plaza; exec. sec., J. Paul Williams, 615 E. Franklin St., Richmond 19, Va.

Jan. 31-Feb. 1 — Minnesota Turkey Growers Assn., Leamington Hotel, Minneapolis; sec., A. E. Eisenmenger, 2200 University Ave., St. Paul 14, Minn.

Feb. 3-5—Association of Southern Agricultural Workers; Hotel Marion, Little Rock, Ark.

Feb. 6-7—New Hampshire Poultry Health Conference; University of New Hampshire, Durham; chm., W. C. Skoglund, Poultry Husbandry Department.

Feb. 6-7—Oregon Animal Industry Conference; Oregon State College, Corvallis, Ore.; gen. chm., Fred West, Oregon Feed & Seed Dealers Assn., college chm., Dr. J. E. Oldfield, Department of Animal Husbandry.

Feb. 6-8 — American Dehydrators Assn., Broadmoor Hotel, Colorado Springs, Colo.; exec. v.p., Joseph Chrisman, 430 Board of Trade Bldg., Kansas City 5, Mo.

Feb. 10-11 — Montana Nutrition Conference, Montana State College, Bozeman; chm., Dr. O. O. Thomas, Department of Animal Industry.

Feb. 10-11—Poultry & Egg National Board; Bismarck Hotel, Chicago; mgr., Lloyd H. Geil, 19 S. Fifth St., St. Charles, Ill.

Feb. 12—Mutual Millers and Feed Dealers Assn. winter convention; Hotel Statler, Buffalo, N.Y.; sec.-treas., Mrs. G. A. Bentley, 41 Chautauqua Ave., Jamestown, N.Y.

Feb. 13-14—Utah Feed Manufacturers & Dealers Assn., Convention and Nutrition Conference; Utah State University, Logan, Utah; sec., Dr. J. O. Anderson, Utah State University, Logan, Utah.

Feb. 13-14 — Washington State Feed Assn.; Chinook Hotel, Yakima, Wash.; sec., J. G. Wilson, 814 Second Avenue Building, Seattle, Wash.

Feb. 14-16—Institute of American Poultry Industries Fact Finding Conference; Municipal Auditorium, Kansas City, Mo.; sec., Dr. Cliff D. Carpenter, 221 N. LaSalle St., Chicago 1, Ill.

Feb. 23-25 — Ohio Grain & Feed Dealers Assn.; Commodore Perry Hotel, Toledo, Ohio; sec., G. E. O'Brien, Ohio St., Greenville, Ohio.

Feb. 23-25 — Colorado Grain, Milling & Feed Dealers Assn., Shirley-Savoy Hotel, Denver; sec., R. B. Kelley, 714 Cooper Bldg., Denver 2, Colo.

Feb. 24-27 — Colorado Livestock Days; Colorado State University, Fort Collins, Colo.; sec., Dr. Sherman S. Wheeler, director of the experiment station.

Feb. 25-26 — Virginia Polytechnic Institute Nutrition School for Feed Men; Hotel Roanoke, Roanoke, Va.; chm., Paul M. Reaves, professor of dairy science.

Feb. 26-28 — Midwest Feed Manufacturers Assn.; Muehlebach Hotel, Kansas City; exec. v.p., Lloyd S. Larson, 20 W. 9th St. Bldg., Kansas City 5, Mo.

March 12—Distillers Feed Conference; Sheraton Gibson Hotel, Cincinnati, Ohio; exec. dir., Lawrence E. Carpenter, 1232 Enquirer Bldg., Cincinnati 2, Ohio.

March 13-14—Oregon Feed & Seed Dealers Assn.; Multnomah Hotel, Portland, Ore.; sec., Fenn Emerson, Albany, Ore.

March 20-21—University of Maryland Nutrition Conference, Shoreham Hotel, Washington, D.C.; Dr. G. Lynn Romoser, Department of Poultry Husbandry, University of Maryland, College Park, Md.

April 17-19—California Hay, Grain & Feed Dealers Assn., Ambassador Hotel, Los Angeles; chm., Forrest Corzine, Charles T. Taylor Co., Los Angeles.

April 23-24—Texas Feed Manufacturers Assn., Baker Hotel, Dallas, Texas; sec., Ben E. Schmitt, 528 Bewley Bldg., Ft. Worth, Texas.

April 25-26—Texas Grain & Feed Dealers Assn., Baker Hotel, Dallas, Texas; sec., Ben M. Ferguson, 614 Meacham Bldg., Fort Worth, Texas.

May 1-3 — Kansas Grain & Feed Dealers Assn.; Broadview Hotel, Wichita, Kansas; sec., O. E. Case, 609 Wiley Bldg., Hutchinson, Kansas.

May 4-5—Missouri Grain, Feed & Seed Assn.; Hotel Governor, Jefferson City, Mo.; sec., D. A. Meinershagen, Higginsville, Mo.

May 10-14—Grain Elevator & Processing Superintendents; Minneapolis, Minn.; sec., Dean M. Clark, 1115 Board of Trade Building, Chicago 6, Ill.

May 21-23—American Feed Manufacturers Assn.; Morrison Hotel, Chicago; sec., W. T. Diamond, 53 W. Jackson Blvd., Chicago 4, Ill.

June 1-3 — Indiana Grain & Feed Dealers Assn., mid-summer convention, French Lick-Sheraton Hotel, French Lick, Ind.; exec. sec., Fred K. Sale, 600 Board of Trade Bldg., Indianapolis, Ind.

June 8-10 — Eastern Federation of Feed Merchants; Whiteface Inn, Whiteface, N.Y.; exec. dir., Austin W. Carpenter, Box 66, Sherburne, N.Y.

June 10-12 — Alabama Poultry Industry Assn.; Auditorium, Birmingham, Ala.; exec. sec., W. L. Walsh, P.O. Box 567, Montgomery, Ala.

June 28-July 1 — Georgia Feed Assn.; General Oglethorpe Hotel, Wilmington Island, Savannah, Ga.; sec.-treas., Will L. Kinard, 3240 Peachtree Rd. Bldg., Atlanta 5, Ga.

Oct. 7-8-9 — Northeastern Poultry Producers Council Poultry Exposition and Convention. Farm Show Bldg., Harrisburg, Pa.; chm., Alfred Van Wagenen, NEPPCO, 10 Rutgers Place, Trenton 8, N.J.

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TWIN POWER—separate motors for mill and blower—greatly *increases* overall capacity . . . greatly *reduces* costly demand and power charges. Enables users (especially in areas with limited power supply) to substantially increase power and production.

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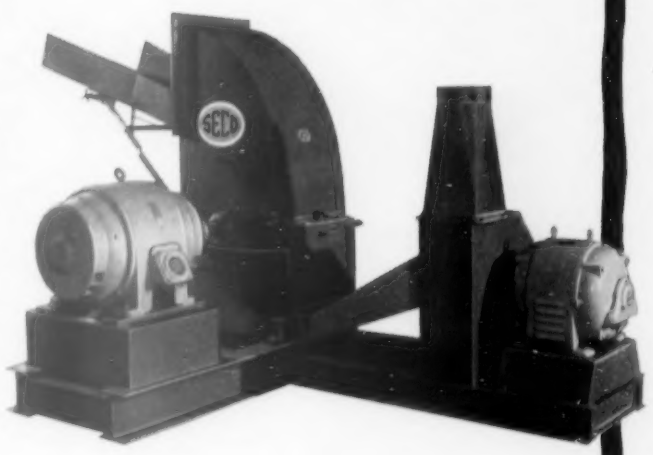

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Actual egg-production results reported by commercial poultrymen. Some used Terramycin in drinking water. Some used it in Extra-Production Laying Feeds. Some used it in both.

NAME	NO. HENS	DAILY PRODUCTION WITHOUT TERRA.	DAILY PRODUCTION WITH TERRA.	EXTRA EGGS PER DAY
West Branch, Iowa, Mrs. John Kafron	200	80	150	70
North Hadley, Mass., Mrs. Katherine Bok	250	150	175	25
Anoka, Minn., Kenneth Nold	500	300	375	75
Struble, Iowa, Luverne Helmrich	600	300	400	100
Northampton, Mass., Joseph T. Kleasner	2,400	1,400	1,560	120
Lakewood, N. J., Manfred Lindauer	7,000	4,025	4,725	700
LeMars, Iowa, Clarence Kallsen	600	300	420	120
Greenbush, Minn., Arnold Anderson	600	300	450	150
Holyoke, Mass., Fred Kollmeyer	800	400	600	200
Cambry, Oregon, Quality Egg Farm	10,000	4,000	7,000	3,000
Boyero, Colo., Virgil Davis	245	80	174	94
Lakewood, N. J., Bernard Roth	4,000	2,700	2,900	200
Woodburn, Ore., Valley View Egg Farm	11,000	4,400	6,600	2,200
Seguin, Texas, Gilbert Krueger	950	684	779	95
Hallock, Minn., Mrs. Hall Moore	100	30	60	30
Coon Rapids, Iowa, George Grossman	325	81	256	175
Ashfield, Mass., George Mowry	300	135	135	0
Blomkest, Minn., Joel Hedlof	400	220	300	80
Pomfret Center, Conn., Seth Oja	500	100	325	225
Carroll, Iowa, John Sibernailer	220	145	187	42
Lakewood, N. J., Leon Pfeffer	7,000	3,500	5,250	1,700
Kit Carson, Colo., Merlin Larsen	250	100	140	40
Royalton, Minn., Phillip Opatz	200	120	150	30
Waverly, Iowa, Ralph Ebaugh	240	132	209	77
Anoka, Minn., Kathleen Gilbertson	200	80	160	80
Lamar, Colo., Mrs. Kenneth Lucas	115	30	69	39
Browerville, Minn., Frank Supen	175	100	130	20
Royalton, Minn., Mike Prokott	150	36	66	30
Otis, Colo., Mrs. Jennie I. Hansen	350	75	235	160
Otis, Colo., Mrs. Jean Hansen	260	30	205	175
Dundee, N. Y., Fred Haskell	1,800	900	1,440	540
Gorman, Texas, T. R. Haile	1,130	565	791	226
Chehalis, Wash., Howard E. Clem	6,500	4,225	4,420	195
Gorman, Texas, James E. Thompson	750	638	690	52
Comfort, Texas, Bill Marks	600	372	426	54
Rochester, Minn., Harley Nereson	8,000	5,200	5,840	640
Arlington, S. D., Jack Steinberg	300	50	154	104
Floyd, Iowa, Joe Rottinghaus	175	53	149	96
Frederic, Wis., Howard Gurdbach	300	105	234	129
Columbus, Ind., Mrs. E. C. Schroer	300	165	234	69
Hallettsville, Texas, Hubbard Wyatt	1,200	744	876	132
Pequot Lakes, Minn., Oscar Wallin	120	40	80	40
Oldham, S. D., Mrs. Lowell Becker	200	85	150	65
Whitehall, Wis., Willard Bollinger	420	300	330	30
Columbus, Ind., Edward D. Scheidt	300	180	249	69
Florence, S. D., Martin Dinks	75	19	56	37
Greene, Iowa, D. D. Marsh	330	122	248	126
Sioux Falls, S. D., Joe Knock	390	242	273	31
Allison, Iowa, Mrs. Daniel Miller	300	75	240	165
Rushville, Ind., Claude R. Butcher	350	168	315	147
Hartford, S. D., Leva Friske	400	200	300	100
Wakefield, Nebr., Edwin Long	400	280	230	40
Tyler, Texas., F. S. Spradlin	500	250	375	125
Tekamah, Nebr., Lyle McClain	112	73	101	28
Leipsic, Ohio, Nat Schey	1,500	675	900	225
LeCenter, Minn., George Hermschied	400	112	192	80
Syracuse, Nebr., Mrs. Vernon Earl	270	180	220	40
LeCenter, Minn., William Schmidt	450	315	315	0
Waterville, Minn., Carl Miller	550	385	440	55
LeCenter, Minn., George Hardy	220	110	187	77
Waterville, Minn., Walter Kokoschke	200	35	130	95
Pierz, Minn., Gerhard Block	160	70	90	20
Appleton, Wis., Gene Palzer	250	138	200	62
Vincennes, Ind., Mrs. Sam Westfall	400	300	360	60
Odessa, Mich., Morris Armstrong	175	105	114	9
Mukwonago, Wis., Raymond Honeyager	75	24	53	29
Elkhart, Ind., Robert L. Dolph	75	24	53	29
Waukesha, Wis., Delmar Trevorrow	700	350	560	210
Clinton, Ind., Mildred R. Wright	95	52	78	26
Appleton, Wis., Donald Sass	235	21	165	144
Vincennes, Ind., Rita M. Primmus	50	18	49	22
Oconto, Wis., Guy Shallow	600	420	492	72
Alton, Iowa, Gerrit Lyzen	135	62	108	46
Emery, S. D., Leroy Letcher	500	375	425	50
Vernon, Colo., Oscar P. Stults	380	175	250	75
Monroe Center, Ill., E. L. Hutchison	500	360	400	40
Somonauk, Ill., Robert A. Amundson	125	15	100	85
Kingston, Ill., Mrs. Elmer Ecklund	1,300	260	910	650
Parker, Colo., Bob Shoefelt	150	12	100	88
Darlington, Wis., Robert Hirsbrunner	48	24	45	21
Colfax, Ill., Kenneth Holderly	125	25	44	19
Belgrade, Minn., Joseph J. Walz	160	72	120	48
Stanton, Nebr., Gilbert Hinnericks	300	96	175	79
Boyceville, Wis., Mrs. Ruth Formoe	250	165	210	45
Dodge, Nebr., Joe Renner	250	150	175	25
West Point, Nebr., Carl H. Anderson	800	400	640	240
	180	108	135	37

Profit from this new way to get more eggs with your own brand of

EXTRA-PRODUCTION LAYING FEED

The extra egg reports are rolling in. Poultrymen throughout the country say: "Terramycin gives me more eggs . . . it more than pays for itself in extra production."

Look at these sales-getting reports from Terramycin users:

SATISFACTION: "Will never be without Terramycin again." *Idaho*
FEED CONSUMPTION: "Birds ate more; produced more." *N. J.*
FEED EFFICIENCY: "Use less feed per dozen eggs." *Ind.*
QUALITY: "Egg and eggshell quality improved." *Ore.*
HATCHABILITY: "Increased hatchability 4%." *Ind.*
MORTALITY: "Had decreased mortality and fewer culls." *Mass.*
REPEAT SALES: "Used it two weeks and stopped. Production dropped to 65%. That convinced me. I put them back on Terramycin and production is up to 85% again." *Iowa*
COST-SAVER: "Reduced egg costs 2¢ per dozen." *Calif.*
SLUMP-STOPPER: "Considerably less egg slumps." *Minn.*
MARKET-PROTECTOR: "At today's prices, we would have had to kill them off if we hadn't used Terramycin." *Wis.*
PROFIT-MAKER: "Thanks to Terramycin I made a little profit this year." *N. Y.*
PEACE OF MIND: "I have peace of mind knowing that everything that can be done to have a healthy flock is being done when we use Terramycin." *Calif.*

The picture is clear. Poultrymen using Terramycin get the results they've wanted for a long time. Or, as Edwin Long, Wakefield, Nebraska explains it, "Anyone not getting results is just not feeding it correctly." It's as simple as that.

What's more, formulation of an Extra-Production Laying Feed is simple. Recommendations are the same as for any premium-quality laying feed *plus the addition of Terramycin.*

Get complete details on Extra-Production Laying Feeds containing Terramycin from your Pfizer representative today. He'll be happy to help in any way.

HERE'S YOUR SALES STORY

In each of these experiment-station documented case histories, egg collections were made from two groups of matched birds. One group got Terramycin, the other group did not.

CASE HISTORY	DURATION MONTHS	AVG. RATE OF LAY		EXTRA RETURN DUE TO TERRAMYCIN (PER MONTH PER 100 BIRDS)				
		No Terra.	With Terra.	Doz. Eggs	@ 25c	@ 30c	@ 55c	@ 40c
TRIAL 1	5	66⅔%	74⅔%	11⅓ doz.	$ 2.98	$ 3.50	$ 4.08	$ 4.67
TRIAL 2	12	57⅓%	72⅔%	37½ doz.	9.38	11.25	13.13	15.00
TRIAL 3	3	60⅔%	68⅔%	20 doz.	5.00	6.00	7.00	8.00
TRIAL 4	3	58⅓%	70⅓%	30 doz.	7.50	9.00	10.50	12.00
TRIAL 5	3	58⅓%	74⅔%	40 doz.	10.00	12.00	14.00	16.00
TRIAL 6	5	52⅔%	62⅔%	25 doz.	6.25	7.50	8.75	10.00
TRIAL 7	7	53⅓%	67⅓%	35 doz.	8.75	10.50	12.25	14.00
TRIAL 8	7	53⅓%	72⅔%	44¼ doz.	11.04	13.25	15.46	17.67

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Corn Feeding in 1956-57 Increased To 15.2 Bu. Average Per Animal Unit

MINNEAPOLIS — Grain consuming animal units in the U.S. were fed 15.2 bu. corn per unit during the 1956-57 feeding year—a considerable boost over the 14.4 bu. fed during the preceding year and the 14.8 bu. per unit fed during the five-year (1950-54) average.

These figures were announced recently in the corn market report issued by the Minneapolis office of the Agricultural Marketing Service, U.S. Department of Agriculture.

The averages are based on figures relating to the disappearance of corn grain during the season. Disappearance was 2,891 million bushels, compared with 2,754 million in 1955-56 and 2,756 million for the five-year average. The amount used for feed, at 2,469 million, was 86 million more than in 1955-56 and 70 million more than the five-year average.

Grain consuming units for the past season were estimated at 162.8 million, compared with 165.6 million the previous season and 162.5 million for the five-year average. Using these figures, the consumption per unit during the season was 15.2 bu., compared with 14.4 during 1955-56 and 14.8 for the five-year average. The number of animal units to be fed during 1957-58 is estimated at 165 million.

Exports last season were the largest of record with 159 million bushels, compared to 107 million the previous year. In addition to corn exported as grain, about 12.7 million bushels of corn products in grain equivalent were exported. Of this, 10.5 million bushels were corn meal export donations under Section 416.

The wet milling industry used 140 million bushels, a drop of 1 million from the previous year. Around 28 million were used for production of alcohol and dry milling and breakfast foods took another 83 million bushels.

Based on Chicago prices, 100 lb. of barrows and gilts would buy 14.8 bu. of No. 3 yellow corn the first three weeks in October, compared with 12.1 a year ago and 11.9 two years ago. The more favorable ratio for feeders is due to somewhat better hog prices and lower corn prices.

Corn prices in October dropped to the lowest level since 1945, reflecting the large supplies of feed grains. The price for No. 2 yellow corn in Minneapolis was $1.08—20¢ less than a year ago. Last season, with the national support rate at $1.50, 476 million bushels went under price support. It is estimated that 440 million bushels will go under support and will be delivered ultimately to CCC at this year's support rate of $1.40.

In spite of good disappearence of corn, the carryover is estimated at 1,357 million bushels, compared with 1,165 million the previous year and 619 million bushels for the 10-year average. The crop this year is also somewhat smaller than last year, but the corn supply for 1957-58 is 4,312 million bushels, up 65 million from last year.

Dr. George J. Christie

EASTERN STATES STAFF — Feed research, especially that relating to medications, will be the main responsibility of Dr. George J. Christie, who recently joined the staff of Eastern States Farmers' Exchange, Inc., West Springfield, Mass. Most recently, he was with the Indiana State Livestock Sanitary Board as director of the poultry disease control program. Of Scotch descent, he studied veterinary medicine at Veterinary College, University of Edinburgh, Scotland, and at Purdue University, where he also served on the staff. Dr. Christie is a member of the Royal College of Veterinary Surgeons, the North Central Regional Conference of Poultry Pathologists and the Poultry Science Assn.

Poultry Publications Announce New Editor

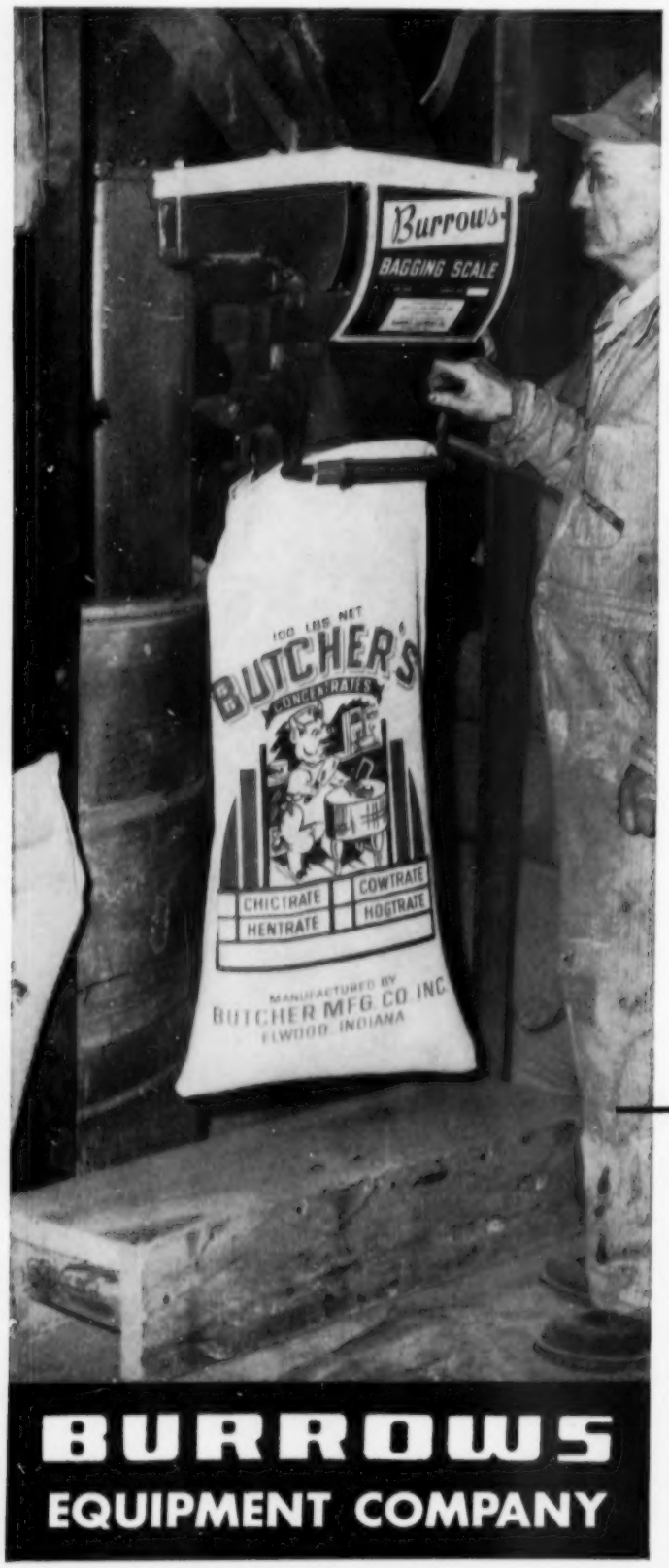
RICHMOND, VA. — The Virginia Poultryman and Southeastern Poultryman, official publications of the Virginia State Poultry Federation and the Southeastern Poultry & Egg Assn., have a new editor.

He is Aubrey F. Tucker, former newspaperman and public relations man. Mr. Tucker replaced Elmo Hester, who is now editor of the Georgia Farmer, publication of the Georgia Farm Bureau Federation, Nov. 1.

Mr. Tucker attended Western State College, Bowling Green, Ky., and since 1951 has been in various newspaper and public relations posts.

SMALL FLOCKS ABOUND

FARGO, N.D.—Approximately 90% of North Dakota's poultry flocks contain less than 200 layers. This was brought out in a recent survey of the state. The survey also showed that white shell color predominates in large flocks, while less than half of the eggs produced by smaller flocks are white.



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He said, "We have been able to mix and bag an extra 3 to 4 tons of feed per day with the same amount of labor that we have had previous to the purchase of this scale. We refer to the scale as our other ½ man.

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If you want this same efficiency in your mill Buy the Burrows Model 700 Bagging Scale.

- Compact, can be installed in any 18x18" area.
- Can be attached to feed mixers, any bin or hopper.
- For feed, seed and fertilizer.
- Hand operated—6 to 8 bags per minute.
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- Weigh beam built into scale — beam weighs to 160 pounds.
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Do you want to be absolutely *sure* the feeds *you* make are the best your customers can buy? That you offer complete, meat, milk and egg producing, new Nutrition Programs which will enable you to meet—and beat—competition of *any* size? Yet, feeds whose formulation and fortification are push-button-easy?

***To have this assurance*—and ease—use the new Dawe's Vitamelk Programs.**

You retain the economy of local mixing, yet take advantage of Dawe's big-scale, centralized, scientific nutrition research.

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WORLD'S OLDEST AND LARGEST SPECIALISTS IN VITAMIN PRODUCTS FOR FEEDS

How to Determine Physical Inventory Of Bulk Ingredients

By Paul Berg
Professional Engineer

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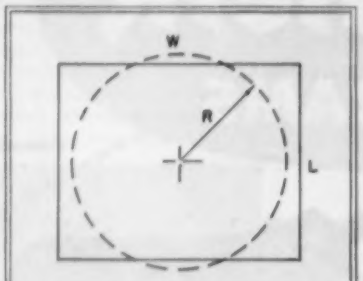
Many feed mills keep a perpetual inventory based on inbound and outbound weights and apply to this figure a shrink factor which has been determined through experience in their own operations. The bin of a particular ingredient periodically is allowed to run empty to bring the perpetual inventory back to zero. A periodical physical inventory is necessary to check the perpetual inventory to be certain costly errors have not been made. If weighing equipment is not used, the physical inventory is the only method to complete a profit-and-loss statement.

The process of determining quantities in bins is laborious and, because of the calculations involved, is subject to many errors. Feed millers often use shortcuts which result in unreliable answers.

In determining the contents of a bin, there are only a few parts of the calculations that cause trouble, and these can be simplified. These are:

1. Determining the shape of the pile.
2. Finding the capacity of the hopper.
3. Figuring the area of the bin.

Since the shape of the pile and the shape of the hopper are similar to pyramids or circular cones, the volume may be determined from the mathematical relationship that Volume equals ⅓ x Height x Bin Area. This formula is for a pyramid and will approximately cover the cone. Since the volume is a function of ⅓ the height, using this fraction gives the equivalent height if the pile was,



BIN AREA
W X L = H
CONE HEIGHT
$C = \frac{WH}{2X2} \times .5$
C = R X .5

FIG. I

for all practical purposes, leveled off.

In determining the height that the pile reaches, it will be noted in Figure I that C is equal to the average radius of the bin x .5. The .5 figure is derived from the angle of repose of 30 degrees, which is about average for feed ingredients.

To determine the equivalent depth of the hopper, the ⅓ assumption is again used. The hopper is actually a frustum of a pyramid, but the portion cut off at the apex of the pyramid is not of consequence.

In calculating the area of the bin it is necessary to know the shape. If the bin is rectangular or round, the area is very easy to determine. In some cases the bins are of odd shapes, and it is best to break up the shape into rectangles, triangles, etc. and calculate each separately to find the total area.

To illustrate the procedure of obtaining the bulk inventory assume a 6×8-ft. rectangular bin with a 12-ft. deep hopper. The bin which is known as No. 10 is partially filled with 32-lb. oats. The Sample Calculation Form illustrated with this article has already had certain items marked (*) entered which are the known items for that particular bin.

The first step is to determine the

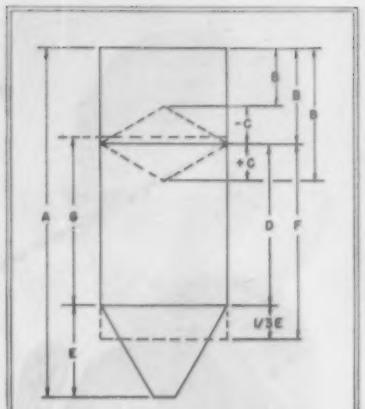


FIG. II

Dimension B by dropping a tape with a plumb-bob at the end down at the center of the bin to the top of the surface.

The shape of the surface is also noted so that the surface correction can be determined. The surface of the material will be one of three forms: Recessed, leveled or piled.

It is well to mention at this point that in deep bins it is difficult to ascertain the exact shape of the pile. An extension light lowered to the top of the pile will cast shadows that will indicate the pile contour.

In order to explain the sample calculations for Bin 10 let us run through each step.

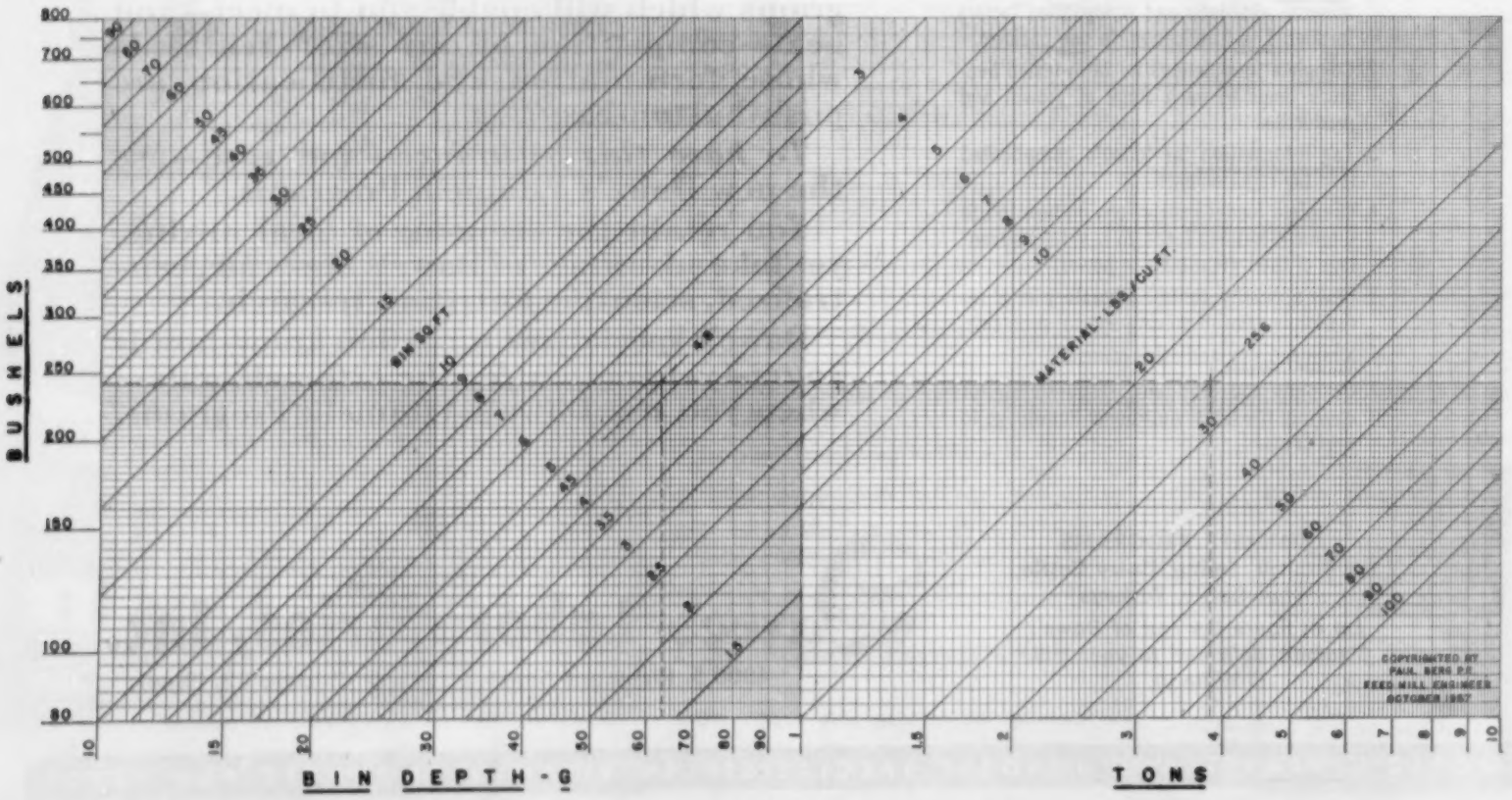
In the sample the correction indicates that the surface was recessed (apparently from the bin having just been emptied). Therefore 1.75 ft. is added to the Amount B. We can now

SAMPLE CALCULATION FORM

ALL DIMENSIONS IN FEET

BIN NO.	BIN HEIGHT	AMOUNT EMPTIED	SURFACE CORR.		CORR. B	BIN DEPTH D	HOPPER EQUIV. DEPTH	ACTUAL DEPTH F	PACK CORR. G	BIN AREA H	BIN VOLUME V=GXH(.8)		MATERIAL IN BIN	APPARENT DENSITY W=LBS. PER		TONS
	A	B	+C	-C	B±C	A-B	1/3 E	D+1/3E	F+1.5%	H=WXL H=πR²	CU.FT.	BU.	SEE TABLE	CU.FT.	BU.	VXW/2000
10*	80*	20	1.75		21.75	58.25	4*	62.25	63.18	48*	3032.6	2426.1	OATS*	25.6*	32*	38.8

BIN CAPACITY CHART



Paul Berg

AUTHOR—The author of the accompanying article is Paul Berg, Ft. Wayne, Ind., a professional engineer specializing in feed mill and grain storage design. He contributed the engineering on the pilot feed mill at Kansas State College, has designed feed and grain projects in various parts of the U.S. and foreign countries and is a member of national and regional feed and engineering organizations.

arrive at the material depth D, by subtracting B from A.

The next correction is for the 12 ft. deep hopper which, after correction, has an effective depth of 4 ft. The actual bin depth then becomes F or 62.25 ft.

A correction factor can be applied for the packing tendency of the material. This is difficult to accurately determine since the percentage of packing is not constant with depth and it varies with time. Based on experience with different materials, an average of 1.5% of the depth must be added to the depth to correct for packing. The corrected actual depth becomes 63.18 ft.

The balance of the calculations are elementary; the Bin Area of 48 sq. ft. had already been determined from the width of 6 ft. and the length of 8 ft., and since the material in the bin was 32-lb.-per-bushel oats, the final capacity becomes 38.8 tons.

Bin Capacity Chart

To check the calculations, we can trace through the same figures on the Bin Capacity Chart. Using the actual corrected depth G of 63.18 ft., we enter the left hand chart at the bottom and start our line upward to intersect Bin Area 48. Since 48 does not appear on this part of the chart, we use 4.8 by moving over one decimal point.

Carrying our guide line to the right to material weight of 25.6 lb. per cu. ft., we find the answer is 3.88 tons, and to correct for the decimal point previously moved, we now move it back and our answer becomes 38.8 tons. Note at the left hand side of the chart this indicates approximately 2,400 bu. (add one zero) which agrees with the calculations.

Through the use of the Sample Calculation Form, it is possible to fill in the data in the mill and have the calculations performed in the office by a clerk.

If the results from these calculations do not agree with results determined by weight, the reason may exist in several places. The apparent density will vary as much as 20% in some commodities. The apparent density in the bin will vary due to separation and the fact that the center or fines are drawn out first. The amount of packing will vary with different materials, the length of time the material has remained undisturbed in the bin and the depth of the bin. The accuracy of the weighing equipment may vary several percent, plus or minus. There is constantly a shrink due to moisture loss, infestation and dust loss.

Because of the many factors affecting the accuracy of the physical inventory, it is necessary to approach the calculations with a full understanding of the factors and take every precaution to be as accurate as possible.

REPRINTS

Reprints of the accompanying article and data on determining bulk inventory will be available from Feedstuffs, P.O. Box 67, Minneapolis 1, Minn., at a price of 15¢ each.

MORE DATA

The author of the accompanying article is gathering important data on flow and storage characteristics of all types of feed materials. Some of the information—that which is currently available on density of various ingredients—is presented in the table on this page. This is used in determining bulk inventory, as explained in the article. Information on other ingredients and other data (on such things as amount of settle, angle of repose and angle of flow) also are being collected and will be reported later. The author is working with the technical committee of the Association of Operative Millers, Kansas State College, feed millers and suppliers to the feed industry. He also has been in contact with trade and technical groups. Mr. Berg says he invites assistance from anyone interested in technical information on ingredients so that a nationwide average can be obtained and the information made more representative.

Apparent Densities of Dry Feed Ingredients

(Pounds per Cubic Foot)

*Items listed by the Association of American Feed Control Officials

Description	Weight/ cu. ft.
ALFALFA PRODUCTS:	
*Alfalfa meal, dehydrated, 13%	16-18
*Alfalfa meal, dehydrated, 17%	18-22
*Alfalfa meal, suncured, 13%	14.0
*Alfalfa leaf meal	14.5
*Alfalfa steam meal	12.0
Alfalfa pellets, 13%	41-43
Alfalfa pellets, 17%	41-43
Alfalfa meal, fine ground	15-22
Alfalfa seed	48
ANIMAL PRODUCTS:	
*Blood meal	38.5
*Blood flour	30.0
*Meat meal	37.0
*Tankage (digester)	49¼
*Poultry by-prod. meal	34-37
Bone meal	50-53
BARLEY PRODUCTS:	
*Rolled barley	21-24
Barley (scoured)	41
Barley, whole	38-43
Barley, ground	24-26
Barley, malt	30-31
BREWERS PRODUCTS:	
*Brewers dried grains	14-15
*Malt sprouts	13-16
CITRUS PRODUCTS:	
*Dried citrus pulp	20.5
CORN PRODUCTS:	
*Corn meal	38-40
*Corn bran	13
*Corn feed meal	33.5
*Corn chops (fine)	36-39
*Corn chops (medium)	38-42
*Corn chops (coarse)	40-44
*Corn grits (fine)	40-43
*Ear corn chops	35
*Corn gluten feed	26-33
*Corn gluten meal	32-43
*Hominy feed	25-28
*Corn oil meal	33-36
*Corn germ meal	35
Corn, ground	34, -36b
Kibbled corn	20-22
Ear corn	56 (28)
Ground cobs	17
Pop corn, ear	56 (28)
Pop corn, shelled	44-46
COTTONSEED PRODUCTS:	
*Cottonseed oil meal	37-40
*Cottonseed cake	40-45
Cottonseed meats	40
Cottonseed cake, cracked	41
Cottonseed hulls	12
Cottonseed w/lint	18-25
Cottonseed, delinted	22-27
DISTILLERS PRODUCTS:	
*Corn distillers dried grains	18-19
*Corn distillers dried solubles	25-26
GRAIN SORGHUMS:	
Kafir	40-46
Sorghum seed	32-33
Kafir and milo	40-45
Milo, ground	32-36
LINSEED AND FLAX PRODUCTS:	
*Linseed oil cake	45-50
*Linseed oil meal (sol. ext.)	31-33
*Flaxseed screenings	26-28
*Linseed feed	20-21
Flaxseed	43-45
MARINE PRODUCTS:	
*Fish meal	30-34
*Shrimp meal	25
MILK PRODUCTS:	
*Dried whole whey	35-46
*Condensed buttermilk	31
MINERAL FEED:	
*Salt	62-70
*Calcium carbonate	75
*Defluorinated phosphate	97
Potassium iodide	22
Bentonite	51
Limestone	60
Phosphate	75
Sulphur	13
Cobalt sulphate	48
Copper sulphate	62
Ferrous carbonate	85-90
Phosphate, tricalcium	21
Zinc sulphate	85-88
Sodium bentonite	41
OAT PRODUCTS:	
*Oat hulls, unground	8-9
*Oat hulls, ground	11-12
*Oat middlings	30
*Oat chops	30
*Ground oats	20-25
*Pulverized oats	19-21
*Crushed oats	22
*Crimped oats	19-25
*Oat groats	46-47
*Feed oatmeal	16-32
Oats, whole	25-35
Oats, rolled	19-24
PEANUT PRODUCTS:	
Peanuts, unshelled	17-24
Peanuts, shelled	15-19
RICE PRODUCTS:	
*Rice bran	20-21
Polished rice	30
Rice hulls	20-21
Rice, hulled	45-49
Rice, grits	42-45
Rice, rough	32-36
RYE PRODUCTS:	
*Rye bran	18-20
*Rye feed	33
*Rye middlings	42
Rye shorts	32-33
Rye, whole	43-45
SCREENINGS:	
*Grain screenings	30
*Chaff and dust	20
*Dust	11
SOYBEAN PRODUCTS:	
*Ground soybeans	25-34
*Soybean millfeed	25-27
*Soybean hulls, unground	6-7
*Soybean hulls, ground	20
*Expeller soybean oil meal	36-40
*Sol. ext. soybean oil meal, 41%	34-36
*Sol. ext. soybean oil meal, 44%	35-38
*Sol. ext. soybean oil meal, 50%	41-42
Soybeans, whole	46-48
Soybean millfeed pellets	37-38
VITAMINS:	
Riboflavin	37
Vitamin A, dry	48
WHEAT PRODUCTS:	
*Wheat bran	11-16
*Wheat standard middlings	18-25
Wheat red dog	22-28
Wheat germ meal	28-32
Wheat, whole	45-52
Wheat screenings	17-25
Wheat, ground	38-39
Wheat, coarse cracked	35-38
Wheat, fine cracked	38-41
Wheat, flakes	31-33
YEAST:	
*Dried yeast	41
MISCELLANEOUS PRODUCTS:	
*Buckwheat middlings	22
*Dried beet pulp	11-16
*Copra oil meal	27
*Copra oil cake	33
Buckwheat bran	15-16
Buckwheat hulls	12-13
Buckwheat, whole	37-42
Beets	48
Broom corn seed	41-42
Malt, wet	60-65
Malt meal	36-40
Malt, dry	27-32
Brewers grains, wet	55-60
Clover seed	48
Corn and oats chops	17-18
Feeds:	
Dairy, light	18-22
Dairy, heavy	20-28
Dairy, concentrates	43
Hay, loose	5
Hay, pressed	8
Millet	38-40
Molasses feed	20-25
Pellets:	
¼" hog pellets	39
⅜" rabbit pellets	37
Peas, dried	48-50
Sugar	54-56
Sea Coli	45
Stilbestrol	40
Sunflower seed	26-28
Timothy seed	36
Urea	34-42

density will vary as much as 20% in some commodities. The apparent density in the bin will vary due to separation and the fact that the center or fines are drawn out first. The amount of packing will vary with different materials, the length of time the material has remained undisturbed in the bin and the depth of the bin. The accuracy of the weighing equipment may vary several percent, plus or minus. There is constantly a shrink due to moisture loss, infestation and dust loss.

Because of the many factors affecting the accuracy of the physical inventory, it is necessary to approach the calculations with a full understanding of the factors and take every precaution to be as accurate as possible.

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Progress and Problems for the Feed Industry

AFMA Chairman Discusses Farm Changes, Credit, Government Controls, Integration, Pelleting, Complete Feeds, Feed Regulations

● By Oscar Straube

EDITOR'S NOTE: There's some food for thought, and a map of some paths for action, in the accompanying discussion of some of the progress and problems involving the feed industry. Oscar Straube—president of Pay Way Feed Mills, Kansas City, and chairman of the board of the American Feed Manufacturers Assn.—urges feed men to work together for: (1) Effective use of men, money and land; (2) protection of feeders from the threatened government controls; (3) obtaining the most benefits from mechanization in manufacturing and handling; (4) cooperation with feed control officials and the seeking of uniform feed regulations; (5) further study of the advantages of pelleting, medicating and complete feeds; (6) helping feeders maintain low-cost, economical and profitable production. This article is the text of a talk given by Mr. Straube at the recent Cornell Nutrition Conference.

The tremendous success of the feed industry and its greatly expanded service to agriculture, which have resulted in many benefits for the people of our country, is a fascinating story. Because of this success, more food, better food and relatively lower cost food grace today's table. Most important, though, is the health-protecting power of the superior quality meat, milk and eggs being produced by modern methods.

Responsible in a large measure for this progress are the nutritionists of college and industry. Aided by other scientists, geneticists, and men of business, they are bringing to the farm new feeds, new concepts of feeding practices and new management ideas which are creating a great amount of new wealth for our country. They are reducing the risks involved in livestock and poultry feeding; they are showing the way to greater production with less work in a shorter time.

Today's automotive, automatic, push-button, sit-down way of living requires that this progress continue. The protective protein foods are needed because our bodies as they are used at work today cannot burn up the starches of a high carbohydrate diet. We cannot be logged down with heavy enervating foods because at work or play this is no time for dullness or bird brains. We must maintain a high degree of health and vitality so we may have the energy, enthusiasm and zest to enjoy the 30-hour week. Our steady population increase calls for a greater supply of these foods too. And, furthermore, there is a natural preference for the rich goodness of a diet of meat, milk and eggs.

Tremendous changes taking place in the farm lives of America today are helping to bring the blessings of these good foods—these protective foods—to added millions. The foundation of this progress is nutritional work for it is making possible the feeding of livestock and poultry in a manner hardly dreamed of a few short years ago.

Men, Money and Land

To get the most benefit for the most people from these technological improvements, we must make the best use of the three important segments of feeding and farming—namely, men, money and land.

The number of acres of land in use remains about unchanged from a few years ago. However, the attitude of farmers, and farm economists, toward that land, has changed materially—from one of exploitation to an attitude of conservation. The fewer people who live on these acres find their way of living to be more a part of the general economy than was the lot of their predecessors. Their feeding and farming operations are more akin to other businesses. They buy a greater portion of their needs. Things which were seldom purchased are now required items of an enlarged business operation. They are such items as tractors, fertilizers, hybrid seed corn, germicides, sprays, extra livestock or poultry, and formula feeds.

Money or credit is required to make these added purchases, and as this economic adjustment continues, we will see increases in the amount of capital and credit needed for all farming and feeding operations. Obtaining this money has been difficult, and may become more so, for in many cases these are not bankable loans.

There is nothing unique about this need of credit by a growing industry. Our railroads were built on credit. Individuals paid their money to the railroad companies for a piece of paper. This represented preferred stock which paid 6%, if earned, and was actually a mortgage on the assets of the company. Today in the feed business this process is reversed. The company furnishes its money or feed to individuals in return for a piece of paper, a mortgage, which pays 6%, if earned.

What are the social implications of

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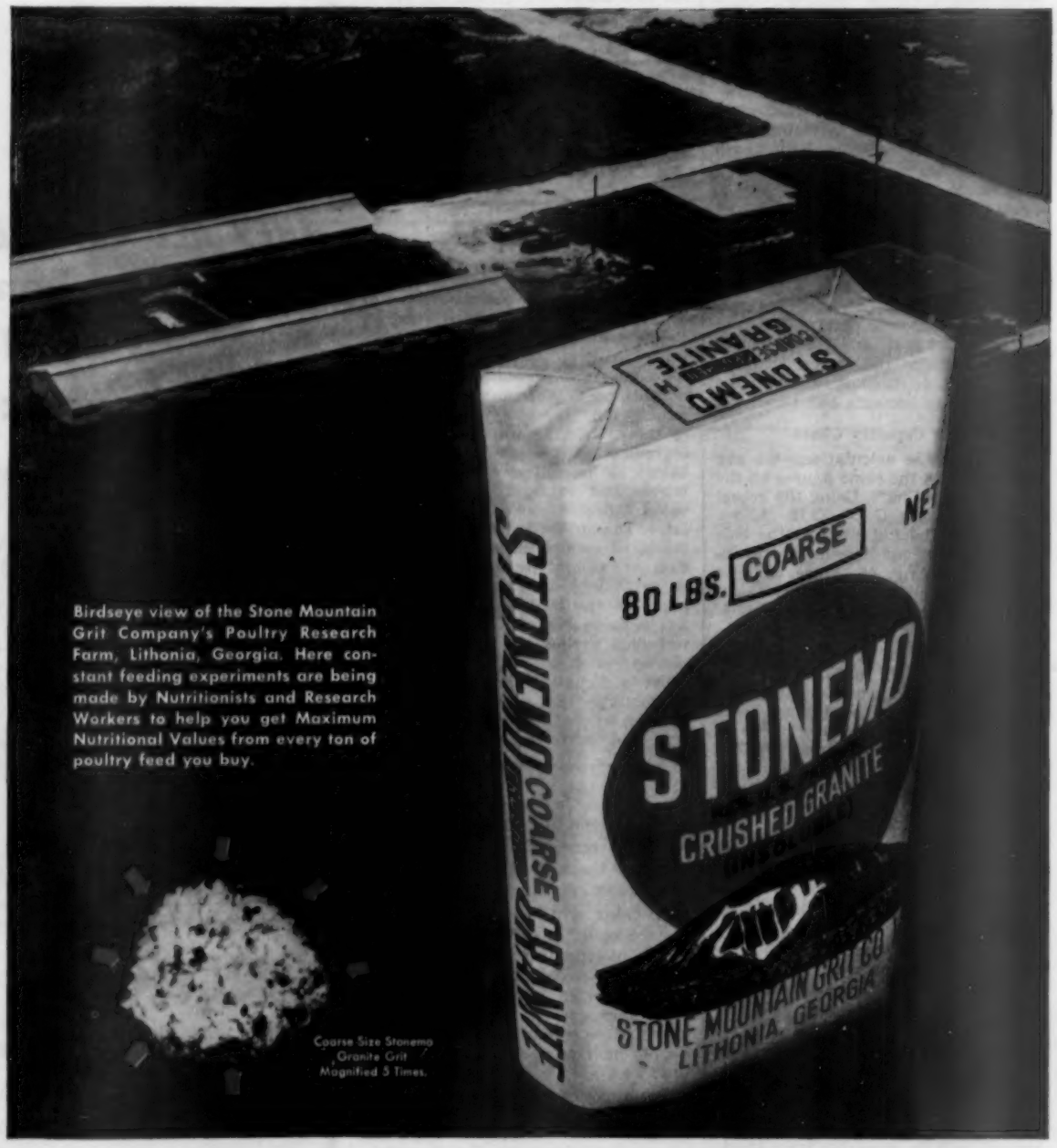

Birdseye view of the Stone Mountain Grit Company's Poultry Research Farm, Lithonia, Georgia. Here constant feeding experiments are being made by Nutritionists and Research Workers to help you get Maximum Nutritional Values from every ton of poultry feed you buy.

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STONEMO GRANITE GRIT – The Grit with the

this change? I confess that *I* do not know. But I do know that in the process of building railroads, airlines, automobiles, radio, television and other industries, much credit has been extended unwisely and much money lost, during the development stages. The inefficient producers and incapable managements have fallen, been trampled on, and forgotten. Only the able, intelligent and strong have survived to bring to us richness, beauty and ease of living which no man has known before. Such is the story of progress.

While speaking on this new look in agriculture, Earl Butz, former assistant secretary of agriculture, made the following highly significant statement last May at the AFMA convention in Chicago.

"As agricultural science continues to advance, it is inevitable that the business units in agriculture will get bigger and bigger, with still larger amounts of capital required. This trend cannot be stopped, nor should it be. We must adjust our farm institutions and our farm progress to it, so as to capture such benefits as will flow from it."

It is my sincere belief that many other students and authorities on agricultural progress agree with this thought.

Problem of Controls

When speaking of problems such advancements bring, Mr. Butz later in his talk sounded a warning which we should all heed:

"Government production, marketing and control programs in their very nature are backward looking. They inevitably tend toward the distribution of 'equal shares' among producers at a minimal level. They tend to freeze patterns of production. They make it difficult for efficient producers with ambition and imagination to grow along with advancing science and technology. In their very nature, therefore, they make it difficult for individual farm families to share, over the long run, in the rising general prosperity of our economy."

I am calling this to your attention because I believe sincerely every effort should be made to permit the feeding and financing of livestock and poultry to continue on a free and open basis. If the present request for controls in the broiler industry is enacted in Washington, it will only be a matter of time until we have similar controls covering the feeding of laying hens, turkeys, hogs and beef cattle. So, let's each one of us, at every opportunity, fight with all our might any legislation which may be proposed to put control programs of any kind on livestock and poultry feeding.

We do not want to become a nation of peasants by tying our feeders to uneconomic units of production by law.

Credit Recommendations

Recognizing the credit problems of feeders and their direct relationship to the industry, the AFMA has published its revised credit recommendations. We think it would be to the best interests of all livestock and poultry feeding operations if those recommendations were followed by everyone. However, we can only suggest. Present federal laws prevent our getting together on any compulsory, or self-imposed, industry plan. Our diligent efforts are being directed toward the use and adoption of this credit plan by the feed industry. Members and non-members are being urged to adopt and follow these recommendations, and it is our sincere hope they will do so.

Oscar Straube

Also, it is to the best interests of all to help prevent over-expansion through unwise extension of credit. Care must be used, since units of feeding are expected to be larger, the demands for credit will be larger too.

However, a very good point is that this new kind of feeder is a businessman-feeder, accustomed to giving financial statements and accounting for his operation. He is becoming a specialist, too. There is apt to be only one kind of feeding operation on his farm, and not the feeding of small units of poultry and livestock we have known in the past.

Integration

This will naturally lead to an integrated operation of some type. Too much is dependent on this one specialized feeding operation, so the operator wants to know where he is to get his stock, his feed, his money, and what he is going to do with the finished product. When he has this kind of information, he can increase the size of his operation, improve its efficiency and, with a portion of the risk gone, can operate on a smaller margin of profit. That is what has happened in broilers and is what we are very apt to see happen in various other feeding operations.

This does not mean that feeding of all livestock and poultry will leave the farm. Quite the reverse should be true. The farm offers many ad-

Feeding Program PRODUCTION COSTS $16,850 PER MILLION BROILERS

READ ABOUT THESE TESTS

In a one-year test of 9,600 birds under the same management (4 houses, 6 pens each, 400 birds to a pen), a standard commercial broiler all-mash ration was fed. In four pens no Granite Grit was fed. In 20 pens various grit sizes were fed for different periods of time. In 4 pens Fine (Chick) Size was fed for the full growing period, while in four others birds received Fine (Chick) Size STONEMO for the first 3 weeks – Medium (Growing) Size STONEMO for the second 3 weeks, and Coarse (Hen) Size STONEMO until market time.

Without fail all pens fed Granite Grit showed improved feed efficiency, greater average weight and a lower cost in producing each pound of meat.

Broilers receiving larger size Stonemo had best market weight – best feed efficiency

The following chart will show you comparative weights at nine weeks–comparative feed efficiency–and comparative cost per lb. of meat when no grit was used, when only Fine (Chick) Size grit was fed for the entire growing period, and when Fine Size STONEMO was fed for the first 3 weeks, Medium Size STONEMO for the second 3 weeks, and Coarse Size STONEMO until market time.

Feeding Program	Growing Period	Weight	Feed Efficiency	Cost per lb. of Meat
All Mash—No Grit	9 wks	3.36	2.63	17.02
All Mash—With Fine (Chick) Size STONEMO	9 wks	3.42	2.59	16.75
All Mash—Recommended STONEMO Feeding Program	9 wks	3.44	2.55	16.53

Considering all costs (chicks, feed, grit, and incidentals) a saving was made of almost ½c per lb. or $16.85 per thousand broilers. Chick cost was 13 cents. Average feed cost was figured at $5 per hundred, and the Grit was figured at local retail cost of 1c per lb.

TEST THE STONEMO FEEDING PROGRAM

Many broiler growers we find feed Fine (Chick) Size and Medium (Growing) Size *too long* for best gizzard development and best usage of feed.

It pays to change from Fine Size STONEMO to Medium Size at the end of the 3rd week. Change from Medium Size STONEMO to Coarse Size at the end of the 6th week. Recommend Coarse Size STONEMO from the 7th week on.

SEE HOW CORRECT SIZE STONEMO INCREASES BROILER PROFITS

There are three possible ways that the correct size STONEMO Granite Grit, along with a good commercial broiler ration, can increase meat profits.

1st. Your customers' birds will rid their gizzards of litter, fiber and feathers – make room for more meat-producing feed. 2nd. Feed conversion will be better – your customers will use less feed to produce a pound of meat, even on an all-mash feeding program. 3rd. Your customers get their birds to market quicker–start the next lot of broilers earlier–save time and money.

GET ALL THE FACTS

The broiler growers you sell are missing an extra profit if they're not using Granite Grit. And they're losing extra cash if they're not feeding STONEMO in the correct size.

So always deliver STONEMO with the first lot of broiler mash. Have your customers feed STONEMO according to directions. Be sure they have plenty of hanging-type grit hoppers (figure one to each watering station–3 or 4 to a thousand birds). Remind them to change grit sizes promptly after the 3rd and 6th weeks. Tell them to keep accurate records. They'll see the difference in their broiler profits.

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PAYS FOR ITSELF! Depending on amount of grain handled, some owners *pay for their Arid-Aire in a single drying season.* Superior engineering provides high capacity—keeps operating costs LOW! Fuel and electrical costs average one cent per bushel for shelled corn, soybeans, milo and rice—approximately half that amount for smaller grains. When other cost factors are added such as depreciation, maintenance and manpower, maximum costs will not exceed 3¢ a bushel.

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FEED MEN AND VETERINARIANS MEET—To promote better relations between feed men and veterinarians, a joint committee made up of members from the Nebraska Grain & Feed Dealers Assn. and the Nebraska Veterinary Medical Assn. has been meeting from time to time. As a result of the committee's efforts, a veterinarian spoke at the recent Nebraska Feed & Nutrition Conference held at the University of Nebraska. Committee members who got together on that occasion were, left to right, Harold Fouts, G. E. Conkey Co., Nebraska City, chairman of the feed committee; Dr. John Aiken, South Sioux City, chairman of the veterinary committee; Dr. Fritz Lundberg, Wausa; Bob Bridge, Norfolk Cereal & Flour Mills Co.; Dr. E. Von Tour, president of the Nebraska Veterinary Medical Assn. Absent were Dr. Jack Cady, Arlington, and Frank Kozisek, Gibbon Feed Mill. (Picture courtesy of the Nebraska Farmer.)

vantages to semi-integrated or integrated operations, which will tend to prevent this occurring—low-cost land, use of incidental labor, closeness to carbohydrate supplies and many others. It is our job to develop rations and management practices which will help this farmer-feeder specialist and show him how to maintain a low cost, efficient and profitable operation.

Manpower

We are seeing the mounting importance of money, and the lessening importance of land in these specialized feeding operations. But what about the third important factor, manpower? It should prove an added advantage to the farmer as industrialization and unionization continue to advance. As of today, labor is just about the most expensive thing the feeder must buy. It has doubled in price since the last war, and has gone up twice as fast as the other goods and services he buys. Therefore, the farmer's wife and youngsters can work on specialized feeding operations for a greater monetary return than the pin money which was earned by a few chickens or a cow or two in past years.

The place of the feed nutritionist in this fast changing farm economy is indeed a significant one. The transition goes on relentlessly, changing farming to a new family-business type of operation which is becoming a dynamic challenging way of life. New feeds and new methods of feeding must be developed to ease the economic burdens of the change, and to maintain the gains achieved. More efficient formulas, more economical results, more production per man hour—these are the requirements of the feeder of the future. New ingredients and new formulas will be developed. Also, these results will be secured through more mechanization in the production of the feed itself, and in the actual feeding operation.

Pelleting of Feed

Perhaps the most important mechanical development of the present is the pelleting and granulating of feeds. The superiority of pelleted feeds is being proved time and time again. One of the primary benefits of pelleting is the maintaining of accurate dispersal of minute quantities of medicinal additives throughout the ration. This cannot be achieved in the ordinary local mixed mash type of feed.

With the superiority of pellets being accepted in most quarters, perhaps we may now turn our imaginative minds to discovering new techniques of pelleting. Moisture, preheating, cooling, hardening, types of

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equipment and costs are some of the areas which may be investigated further. Also, it must be remembered that little is known about the chemical changes occurring in feedstuffs which have been pelleted. Here is another field for investigation which could well develop certain very important benefits for feeders.

The dextrinization of corn and the tempering of hulled barley offer speculative food for thought in future processing of carbohydrate sources for increased energy values and lower cost results. We have reduced the feed required to produce a pound of broiler from 4 lb. to about 2 lb. in 12 years. Some people say 2 lb. of feed for 1 lb. of meat—that's about it. Well, let's don't forget that a pound of broiler is over half water, so we still have about a 5 to 1 ratio.

Mechanical phases of manufacturing, handling and feeding feeds have had many excellent improvements. These are holding down and reducing costs. They are playing an important part in bringing about profitable operation of the larger flocks and herds which fit today's economy. With the scarcity and high price of labor, particularly on the farm, added thought must be given to the mechanics involved in the feeding operation, and to the formulating of feeds which may be fed mechanically without waste or guesswork, and with minimum labor.

Complete Rations

A complete ration in pellet or granular form seems to be the ideal answer to this need.

Complete feeds are the safe, certain way to furnish controlled feeding. Complete feeds are most generally foolproof, and may be fed with confidence. Complete feeds are great labor savers.

Also, we all know that the controlled feeding of medicated feeds can be handled best in a complete ration.

Control Problems

Up to this time, the results of medicated feeds are nothing short of miraculous, and there are more amazing benefits to come. We sincerely hope that nutritionists may continue to have full sway in developing rations and their usages, without being hamstrung by a few states' feed control regulations, such as have cropped up in one or two places lately.

John Kuzmeski, the official inspector from Massachusetts and immediate past president of the Association of American Feed Control Officials, made a most excellent retiring address. In speaking on this point before his membership, he made the following pertinent statements:

"We must not dissipate our energy on tasks that have little or no relation to control work. We should **not** concern ourselves unduly with nutritional, pathological and other problems that are being handled adequately by those better qualified to do so. We have a full-time job taking care of our control responsibilities. We should seek the cooperation of, and cooperate with federal, state and industry nutritionists, veterinarians, pathologists, etc., in the performance of our duties. However, in my opinion, we can render the greatest service by 'sticking to our last' and devoting our entire facilities to doing what we are best qualified to do—the fair and common-sense administration of the laws and regulations under which we operate."

"Anyone who looks back and makes a comparison between the relative efficiency of feeds manufactured even as late as 1950 and those of today, cannot help being amazed at the nutritional progress that has been made. The control official has had very little to do directly with this progress."

Uniform Regulations

The economical and rapid distribution of future benefits of medicated feeds depends, in a large measure, on cooperation at every level of regulation and inspection. Uniform feed laws, patterned after the policies of the Food and Drug Administration, should be the result aimed for, and Food and Drug should do its utmost to get states' cooperation to this end.

I believe sincerely that Ralph Kneeland, who works with feeds in Food

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Harry Fiste, feeding 100 head

I think that the gains are much faster and the bloom is much better. Their hair is in a lot better condition. I've had no cattle really go off feed.

Emanuel Schlund, feeding 70 to 80 head

They've got good shiny coats and they eat all the time. With green cattle on Dynafac we would make 3 1/2 to 4 lbs. daily gain.

Ed Borchers, feeding 500 to 700 head

I think these steers have been eating about 2 to 3 lbs. more grain per day and their hair looks good. Just seems to get a better finish on them with this Dynafac.

Joe Corpstein, feeding 1600 to 5000 head (feeding for prime)

We had 60 steers on test with Dynafac for 105 days that made gains of 3.8 lbs. per day and dressed out 62.08%.

Wilbert Anders, feeding 60 head

Dynafac* is distributed nationally for Armour by the Chemical Department, McKesson & Robbins, Inc. For further information contact your nearest McKesson chemical branch office.

A new Dynafac full-color motion picture is now available, "Feeds, Facts and the Future." Write: Armour and Company, Union Stock Yards, Chicago 9, Illinois.

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and Drug, is a capable, able man with distinct leadership abilities. I also believe that he, as new president of the control officials, is entitled to the wholehearted cooperation of every single state feed administrator. This should be freely and unanimously given so that all feeders throughout the length and breadth of the land may obtain maximum feeding profits from these new feeding programs as quickly as possible.

Every one of us should do his utmost to be of assistance to feed control in working out interpretations of regulations which apply to this new field of medicated products. While, on occasions, we may not agree with the methods used, we never question the sincerity or desire of the control official to protect the interest of his feeders. That, too, is our own primary objective.

To protect our feeders' best interests, I hope nutritionists, management and all segments of our industry may work together to accomplish some of the things I have mentioned here:

1. Effective use of men, money and land.

2. Protect feeders from the vicissitudes of government price and production controls.

3. Get the most benefits from mechanization in manufacturing and handling.

4. Cooperate wholeheartedly with feed control officials.

5. Study further the advantages of pelleting, medicating and the complete feeding program.

6. Help feeders maintain low-cost, economical and profitable production.

Then, too, we must not lose sight of the benefits of the art of serendipity. Serendipity, that art by which so many valuable contributions have been made to the world through accidental discoveries.

So, to explore these vast new fields requires imagination and vision, a daring spirit, and a willingness to venture into the unknown areas of research. This, though, is the spirit which has characterized our progress and brought to fruition nutritionists' splendid work of a half century. If the next 50 years bring benefits from these efforts proportionate to the past 50, rich indeed will be the heritage of America and of her friends throughout the world.

New Mobile Feed Mill Now Being Marketed

WINDOM, MINN.—A new mobile feed mill is now being marketed by Mooers Manufacturing Co., Windom, Minn., according to W. D. Mooers, president.

Several of the units are now in operation, Mr. Mooers said. The mobile mill was designed and developed in cooperation with the Mid-States Mill Machinery Co., Omaha.

The Nebraska firm, represented by Les Anderson and Dallas (Ernie) Pyle, acts as distributor for the machines.

Features of the mobile feed plant listed by the Mooers Co. include a twin screw auger feeder; 24-in. hammermill; Chrysler LP gas engine; 155-cu.-ft. mixer; an 8-in. by 15-ft. delivery auger and a molasses system designed for cold weather operation.

The unit is mounted on a new Dodge two-ton cab-over-truck.

The Mooers Co. has specialized in the manufacture of hammermills and agricultural machinery for some 27 years.

ZION FEED STORE SOLD

ZION, ILL.—C. E. Richards, owner of the Zion Feed & Garden Supply Store for the past 20 years, announces that he has sold the store and land to James Ferry, Jr., Glencoe, Ill. The building has historical importance in Zion, for it was the first in the city. It was erected in 1900 for the unloading of lumber and building materials for the new city. It was also used by Dr. James Dowie, founder of the "Christian Catholic Apostolic Church of Zion," for early meetings. The city of Zion is headquarters for the church. Mr. Richards opened his store in the building in 1937.

Proven Value

George Schmidt (center), with feed dealer Wilmer Lary (left), and Gene Gourley (right), Spencer Kellogg District Sales Manager, looking at Schmidt Brothers' grand champion herd.

It takes RESULTS to prove value. A protein supplement is better when it produces better livestock! Ask George Schmidt for an example.

George Schmidt with his brother Ferd feed each year about 450 head of Angus on their farm at Delmar, Iowa. They have won the carload grand championship six times at the Chicago International.

They feed Spencer Kellogg Linseed Oil Meal at the rate of one pound per day per head. They will tell you that its extra quality has something that gives cattle the condition that wins grand championships.

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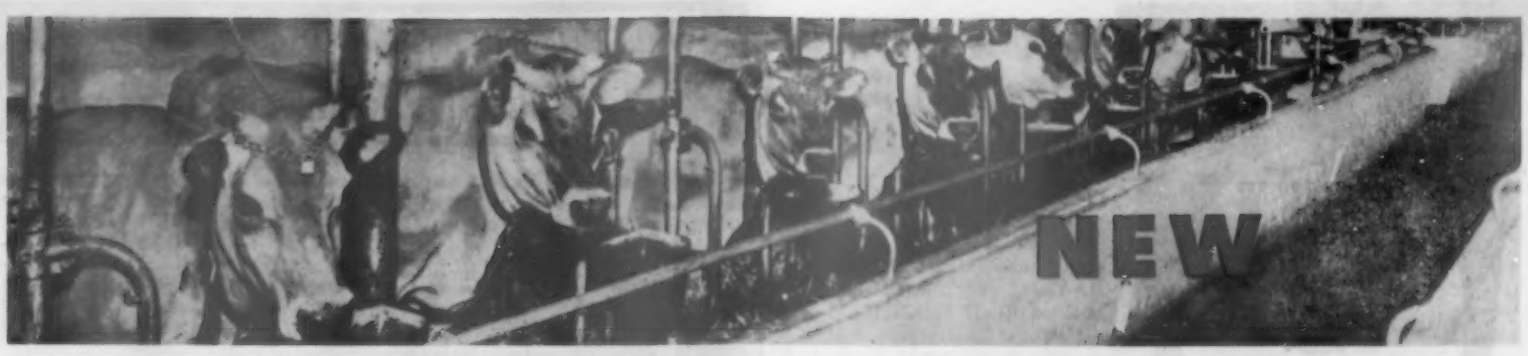

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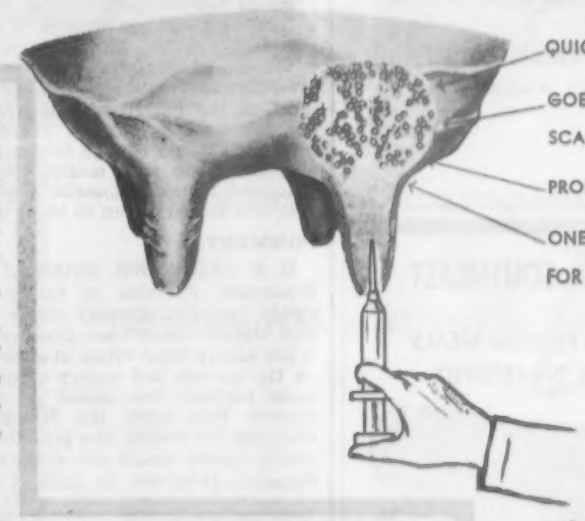
the amazing new "wonder drug" that...

STOPS MASTITIS INFLAMMATION



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GOES TO WORK IMMEDIATELY TO REDUCE SCAR TISSUE FORMATION

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ONE TREATMENT IS NORMALLY SUFFICIENT FOR TREATING ACUTE AND CHRONIC MASTITIS

CORTA-CLEAR SURROUNDS THE INFECTION . . . Amazing new CORTA-CLEAR developed at the Dr. LeGear Laboratories works quickly to stop the spread of infection by localizing the Mastitis outbreak at its point of origin. The amazing new ingredient Hydrocortisone controls the spread of infection and immediately reduces the inflammation.

PENICILLIN AND SULFA DRUGS WIPE OUT DISEASE GERMS . . . As Hydrocortisone holds Mastitis germs and prevents the spread of infection the other drugs in the formula are also at work destroying the Mastitis infection. CORTA-CLEAR halts the spread of infection and by stopping the inflammation it also reduces the formation of scar tissue in the infected quarter.

CORTA-CLEAR LEAVES A CLEAR TISSUE FREE OF SCARS . . . CORTA-CLEAR returns the udder to its normal condition by not only clearing up the Mastitis infection but by also preventing the formation of scar tissue. This new and exclusive feature permits cows to return to full milk production and enables the udder to heal without leaving scars.

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The product customers are using for immediate Mastitis treatment

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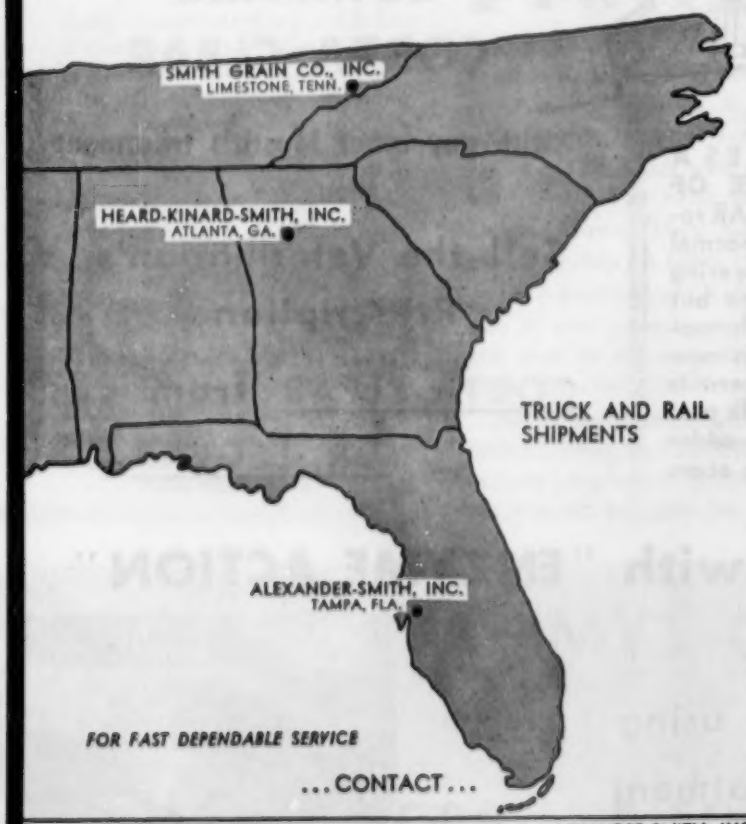

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What's New in Feeding — Putting Research to Work

Freshly Harvested and Stored Barley as Source of Certain B-Complex Vitamins

● B. A. Koch, J. H. Meyer, G. F. Lofgreen and H. Goss, University of California, Davis; Journal of Animal Science, Vol. 16, No. 3, pages 719-724.

The primary objective of this study was to measure animal responses when stored or fresh barley served as the major source of a certain B-complex vitamin rather then to measure actual chemical changes during storage. In the final analysis it is the biological utilization of the stored or fresh barley as a source of certain nutrients which is important. The rat was used as the test animal because of (1) the ease and economy of handling, and (2) the B-complex vitamin requirements of the rat are similar to those of the pig.

For three consecutive years samples of barley grown in the same general area were collected for this study. Part of each sample was fed immediately as fresh barley. The remainder was stored for use in future years in metal garbage cans under normal conditions of temperature and humidity.

It was found that freshly harvested barley or barley stored for two years contained adequate amounts of thiamine and pyridoxine to meet the nutritional requirements of the growing rat. Barley, included as 64% of the diet, did not contain sufficient riboflavin to meet the needs of the growing rat. However, the riboflavin level of the barley was apparently not decreased by storage. There appeared to be no change in the level of pantothenic acid, niacin, choline, folic acid, biotin, or inositol in barley that was stored for up to two years.

COMMENTS:

It is evident that certain of the B-complex vitamins in barley are stable for several years under normal storage conditions. However, it is not known what effect storage had on the protein and energy values of these barleys. One would normally assume that since the B-complex vitamins are stable, the protein and energy values would also remain unchanged. However, in 1955, Cabell and Ellis of USDA reported that some bins of stored corn lost as much as 33% of their protein nutritive value, with no loss of energy value. Unfortunately, no vitamin determinations were made in that study. No comparison can therefore be made of that study with the one reported here.

To date there has not been a great deal of information available on the rate of spoilage of grains in storage. However, the USDA is currently conducting tests on stored corn in an attempt to find an exact determination of the soundness of grain in bins and elevators, and the normal rate of spoilage under various seasonal conditions. Once the deterioration rate of grain in storage is determined, holders of grain will know when to market it before spoilage sets in. The test involves the study of fat acidity, as it is believed to be an index of grain condition. The outcome of these tests is quite important because of the millions of tons of grain in storage. It would be especially valuable to have a working test at present because of the high-moisture grains that are being stored this fall.

National Ideal Co. Shifts Sales Plan

TOLEDO—The National Ideal Co. announces that it will sell nationally a line of baled and packaged peat moss to its customers.

Company officials said that the firm has served in the peat moss field for more than 25 years as sales agent, and that now the company will make its direct entry into the field with a line of bales and packages.

Pilot Killed

KANSAS CITY—A jet plane crash in the Atlantic Ocean off Cape Cod, Mass., has taken the life of Lt. Michael W. Clemens, 22, son of Mr. and Mrs. Michael J. Clemens, Kansas City. Mr. Clemens is a grain clerk for Burrus Mills, Inc. Lt. Clemens was a navigator and observer on an F-89 which apparently crashed into the sea on a routine flight Oct. 23.

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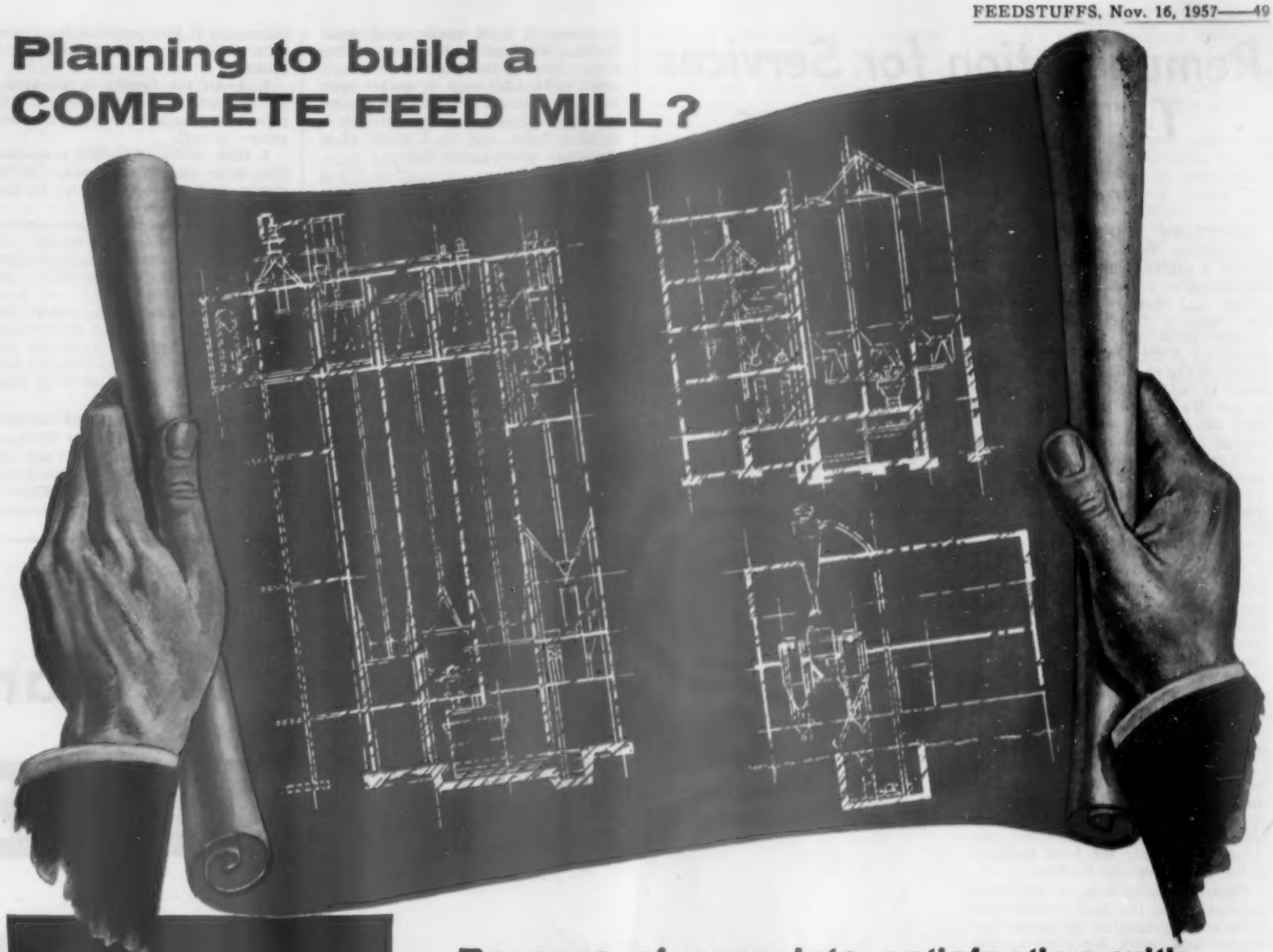

A mill designed and equipped by Sprout-Waldron for Wampler Feed & Seed Co., Harrisonburg, Va. Note Permaglas Storage Structures at right.

This mill was designed and equipped throughout by Sprout-Waldron for Haspaka in Tel Aviv, Israel.

Typical of the thousands of feed businesses throughout the world which Sprout-Waldron engineering and equipment have helped grow from single mixer installations is this Central Pennsylvania mill. It offers a complete service to the farmers in this area.

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You'll get the **one best** answer to your problem of building a complete feed mill to meet your special requirements at Sprout-Waldron. **Only** Sprout-Waldron offers the **BIG PLUS** factors necessary to give you the ideal mill in a complete package . . . at the lowest possible first cost and with the most money-saving advantages.

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PLUS familiarity with milling methods throughout the world and milling machinery as used everywhere . . .

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PLUS current experience in designing and building complete feed mills throughout the world.

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Write today for portfolio of drawings and case histories of recent mills that we have designed and built.

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PE/434

Remuneration for Services To Feed Customers

By L. A. Robbins
Lindsey-Robinson & Co., Inc.

EDITOR'S NOTE: *Increased competition for feed volume has meant a marked increase in the inducements or services which the feed dealer and local mill must offer to feed buyers. In the accompanying article, L. A. Robbins of Lindsey-Robinson & Co., Inc., Roanoke, Va., analyzes the various services and the ways in which the service expense is met. He advises dealers to be sure that the services either can be included in the regular sales mark-up or can be adequately paid for in some other way. This article is from a talk by Mr. Robbins at the Virginia State Feed Assn. convention.*

Today American business is operating at its greatest peace time volume. Despite such record volume, this period has been described by many business leaders as a period of "profitless prosperity." Management is faced with an ever increasing cost of doing business which is shrinking the profit margin, thereby requiring more volume to maintain a given amount of profit.

Competition in all industries is keener than ever before. Management is having to offer more services or other benefits to customers in an effort to maintain a profitable sales volume. Certainly the feed dealer of today knows this to be true.

Competition is keener and more aggressive for the feed volume used by a smaller number of larger feed buyers and users. Next year this number will be smaller; so, it is logical to expect that the competitive struggle for this business will become even more intense.

Inducements or services being offered to farmers and other feed users have been increasing until the feed customer now expects more and more from the feed seller. Many of the things which the extension service formerly did for farmers are now being done by the feed seller and his employees. The dealer's cost of doing business has been pushed higher and higher. Not all of this increase is due to increase in the cost of customer services, however. As already pointed out, all dealer cost items have tended to mount in the past few years.

The expenses of a feed dealer may be classified in two general groups. The first group could be referred to as general operating expenses. The second group would then be called customer service expense. Although we are dealing primarily with the expense of customer services in this discussion, let me say that the dealer must not overlook the importance of maintaining control over his general expense items.

For purposes of this talk, I have divided customer service expense into the following:

1. Services which are paid for entirely from the dealer's regular mark-up on sales.

2. Services which are paid for by dealer and customer. The dealer pays part of the cost of such services from his regular mark-up and passes part of the cost to the customer.

Think of all the possible things a feed dealer might do in the way of customer services to try to build business. If you really used your imagination, you might even see the dealer offering to milk the customer's cows, or feed his hogs, or gather eggs for him. I haven't heard of a dealer who has offered such services on a regular basis, nor do I know of a customer who expects them.

No Extra Charge

What then are some of the services which a dealer might be expected to offer to his customers on which there will be no extra charge? By this I mean the services which would be included as part of the dealer's regular mark-up on sales. I am sure that each of you could list many things which might be done. Such a list might include:

1. Stock a complete line of feed and make available through your store, **seeds, fertilizers and some light farm hardware.** This may seem strange being listed as a service, but it does give the customer a chance to do "one stop shopping" without having to visit several stores to fill his needs. It also provides the dealer with additional sources of volume and income.

2. Assist the farmer in marketing his products by advising him on the price situation and the best times and places to sell.

3. Give advice on feeding programs. This is an absolute necessity for the dealer-contractor who is feeding broilers or turkeys.

4. Give advice on disease prevention and control in livestock and poultry on the customer's farm. This, too, is an absolute necessity for the dealer-contractor.

5. Conduct meetings. Assist the farmers and your local professional agricultural people in organizing and conducting training meetings on subjects of interest and benefit to your customers.

6. Make available parking facilities for your customers at your store.

These are only part of the services which will be paid for by the dealer from his mark-up on sales. While it is true the purpose of such services

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is to increase the dealer's sales volume, there is, nevertheless, a practical limit to the amount of expenses which a dealer may spend on customer service and still continue to make a profit.

Paid for Jointly

The other classification of customer services, we have said, are those which will be paid for jointly by the dealer and his customer. In such instances the entire cost of the service offered should not be passed on to the customer as an extra charge since the dealer also enjoys some benefit from it. These services include:

1. On-the-farm delivery to customers. Most feed dealers recognize the need for a delivery service and offer such a service. Many are also adding some sort of extra charge to the price of feed to help cover the cost of this service. Some have even scheduled their deliveries to help control costs.

How far can you profitably go in making deliveries? What is the smallest load you will deliver? How often should your trucks go over the same route? How do you charge for making deliveries?

Each of these questions must be answered by the dealer who is operating delivery trucks. It is generally felt that about 25 miles is the maximum distance a dealer should go in making deliveries. Many dealers have established regular routes over which the dealer's trucks travel at regular intervals. Those who don't have such routes should schedule deliveries in such a way as to utilize personnel and equipment in making deliveries with maximum efficiency and minimum cost.

2. Credit and finance charges. How many of you have ever stopped to think of the cost involved in extending credit or financing to your customers? There is a tendency to think of the cost as being confined to money actually lost on receivables and interest on money invested in receivables. While they are part of the cost of doing credit business, the expense of credit or finance also includes the extra expense involved in keeping records and making out statements, the expense of collecting accounts not voluntarily paid by the customer, including the dealer's time and travel expense, and attorney's fees in some instances. The expense of investigating or checking-up on prospective credit customers must also be included as part of the cost of credit sales.

Those who are guaranteeing the producer against market loss, whether it be in the form of contracting or an actual agreement to absorb part of the loss, have an extra added expense which should be covered by an additional charge or increased mark up on sales.

The average farmer needs credit or financing assistance for feed purchases, whether on a monthly basis for laying feeds, dairy feeds, hog feeds, etc., or on longer terms for turkeys and other poultry. Most dealers can and should offer such services on a well defined and controlled basis. The feed user should understand that it costs the dealer money to extend credit and that some extra charge will have to be made to cover such services.

Most of the cost of this service will be included in the dealer's regular mark-up. It should be understood that a definite interest charge will be made for any account not paid within the due date. Whatever your terms, they should be strictly enforced. On those accounts which do go beyond due date, an interest charge should be made.

It may be possible for the farmer to obtain his needed financing for feed purchases at local banks or other lending agencies. Certainly the dealer will want to assist the farmer in such case wherever he can.

3. Marketing assistance. In some cases the dealer may actually purchase eggs and other products from the farmers for resale. In so doing, the dealer may simply be trying to help his customers obtain a larger return for their products. In such instances the dealer should receive a benefit or profit of some kind if he is actually buying and selling to help offset the expense involved.

On the other hand, if the dealer is acting as a collecting station and is not responsible for handling of the eggs, milk or other products, he may not want to charge for such deliveries.

4. Mixing and grinding. In today's farm economy, one way that your customers have of making a larger return on what they have to sell is by using home-grown grains wherever practical to do so. The dealer can assist the farmer by offering a grinding and mixing service at his store. He may actually go to the farmer's place and pick up the grain to be mixed with supplements and concentrates.

Here again, a nominal charge is usually assessed for grinding the grain and mixing it with the supplement. Any charge made will not cover the entire cost of depreciation, labor, power and other overhead operating expenses. The dealer will, however, have an opportunity to make a profit from the sale of concentrates and supplements used.

5. Return bag program. Many feed manufacturers today are operating a return bag program wherein the manufacturer will buy back his own used branded bags. The dealer can offer his customers a similar service by permitting his customers to bring the bags to the dealer's store a few at a time, when and as the customer comes to the store. In such cases, the dealer should make a nominal charge for handling the bags.

I am sure there are other services not listed which some of you are performing for your customers, some of which you may be passing on in the form of an extra charge on the feed price. I dare say, though, most of the services are being paid for the only way a dealer can be remunerated

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Performance

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Mazoferm (Corn Fermentation Solubles) supplies a concentrated source of unidentified growth factors and known nutrients. It makes possible greater returns over feed cost.

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HI-SEAS

AMERICAN CYANAMID AWARDS PRIZE LIVESTOCK—Junior champion exhibitors at the recent American Royal Livestock Show in Kansas City received an extra bonus when their animals were named tops of the show. Representatives of the Farm and Home division of American Cyanamid Co. presented 21 purebred beef heifers (three shown above), yearling ewes and gilts to all 4-H Club and Future Farmers of America members showing champions in the junior breeding heifer, swine and lamb classes.

for them, and that is in his mark up. This leads to the question: "How much can a dealer afford to give his customers in the way of services"? Or, expressed in another way: "How many services can a feed dealer charge for in his mark-up"?

This question must be answered individually by each dealer. How is your mark up? Is it sufficient to cover all your cost and still leave a profit? If it is not, it's time you took a critical look at your operation to see what can or should be done to improve the situation. Either you must curtail customer services or increase your mark-up to the point that you can show a profit. In practically every instance, the customer will go along with an increased mark-up if the need for the increase is explained to him as a matter of business necessity.

Good Business Practices

It has been said, "The producer has put on a business suit," meaning that the feed customer is becoming more of a business man. It is time for the feed dealer to put on a similar suit and start applying good business practices in operating his business.

Some of these practices are:

1. A more progressive approach to the problem of **employee bonding.**

2. **Adequate insurance** coverage for the dealer's business, including fire and liability insurance of all kinds.

3. **More realistic financing** on poultry production and on a project basis wherever possible.

4. **Complete and adequate records** to keep the dealer informed of the current status of his business at all times. The records do not necessarily need to be complicated, but they should be complete enough to furnish information needed for management control. The dealer should obtain the assistance of his local accountant in setting up and working out the details of an accounting system for his business.

5. **Quarterly statements** showing results from operations and the financial condition of the company on statement date. Less frequent statements do not keep the dealer as closely informed as he should be. The statements will not serve their pur-

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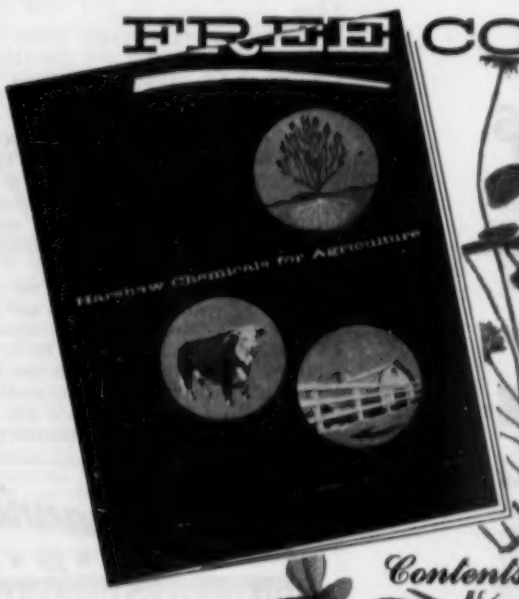

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One fellow tells another what a great job the CPM "Century" does producing top quality pellets. That's good news for the feed manufacturer, too, who gets the highest capacity at lowest cost per ton with a CPM mill. Get *all* the facts today.

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pose if the information supplied is not used by the dealer.

6. **A sound credit and collection policy** which is explained to all customers asking for credit. The dealer can reduce his credit and collection expense by investigating each credit applicant before any credit is extended, by insisting that terms and limits be honored and by prompt action in the collection of any past due accounts, thereby curtailing or possibly eliminating credit losses.

7. Arranging for **long term financing of fixed asset additions** rather than depleting his working capital for such additions.

8. **Constant review of all expense items** to see which can be curtailed or eliminated entirely without affecting the efficiency of the dealer's operation.

9. **Analyze and know the feed potential** in your trade area. Then, make a concerted effort to build a profitable sales volume based on a well diversified feed tonnage including all kinds of poultry and livestock feed.

In conclusion let me leave this thought: The dealer must provide vital services to his customers if he is to maintain sales volume and have an opportunity for profit. Consider, then, each service the customers have requested and those which they might logically be expected to ask for. Can such services be included in regular sales mark-up or can they be paid for in some other way? If not, consider the effect on your business. It may be good to know you are providing those extras—but make sure you are not also providing bankruptcy for your business.

Dried Skim Milk Output Increases

WASHINGTON — Production of dried skim milk for animal feed during the month of September totaled 1.1 million pounds, 35% more than September, 1956, but 9% less than the 1951-55 September average.

This was reported by the Agricultural Marketing Service of the U.S. Department of Agriculture.

Production of dried buttermilk was given as 4 million pounds. That's 2% less than September last year, but 17% more than for the 1951-55 September average. Sales of dried buttermilk for the month totaled 3.6 million pounds. Of that total, 842,356 was sold for animal feed use.

Vice President of Corn Products Dies

ENGLEWOOD, N.J. — Frank H. Hall, vice president and director of the Corn Products Refining Co., died in a hospital here at the age of 87.

Mr. Hall was an associate of Edward T. Bedford, who in 1906 headed a group that formed Corn Products Refining. Mr. Hall, who was a lawyer, handled the concern's legal matters and was later elected a director and vice president.

There's one good reason why poultrymen everywhere prefer EGGSHELL BRAND Oyster Shells. Reason: HENS prefer them.

Tests prove these highly-digestible soft reef shells turn into quality egg shells in as little as 6 hours after consumption. Wise dealers—like wise poultrymen—insist on them.

EGGSHELL BRAND
OYSTER SHELL CORPORATION

September Meat Output Up from Year Earlier

WASHINGTON — Red meat production in commercial slaughter plants during the month of September totaled 2,095 million pounds—up 1% over September last year, according to the U.S. Department of Agriculture.

The month's production brings the cumulative total for the first nine months of 1957 to 18,950 million pounds—3% less than during the corresponding period a year ago. Of the total, 10,435 million pounds were beef, about the same as last year; 1,088 million pounds were veal, down 3%; 6,897 million pounds were pork, down 7%; and 530 million pounds were mutton and lamb, down 2% from the year earlier.

Beef production during September was 1,149 million pounds, 4% more than a year earlier. Veal production was down 8%.

Pork production was 760 million pounds, 1% below the level of September last year. Lamb and mutton output during September was 56 million pounds, 2% below a year earlier. Poultry slaughter was 522 million pounds, ready-to-cook basis, 5% over September a year ago.

NEW SOYBEAN PLANT

CLARENDON, ARK. — Herman Young, Forest City grain dealer, has remodeled the old Cotton Belt water tank at Clarendon into a bean handling plant, and has also purchased the Trimble Soybean Co. plant and facilities. George Stagg and Henry Sain will manage the new business.

Heads Pennsylvania Co-op Feed Operations

HARRISBURG, PA.—The appointment of Mark S. Hess as manager of feed operations for the Pennsylvania Farm Bureau Cooperative Assn. was announced in Harrisburg recently.

L. A. Thomas, Jr., administrative director of operations, said Mr. Hess began work Nov. 4 for the statewide cooperative. Prior to accepting his new post, Mr. Hess was secretary-treasurer of Pennsylvania Farm Bureau and president of Lancaster County Farm Bureau.

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Lilly REPORT TO THE FEED INDUSTRY

"I weigh my cattle every 30 days... get extra gains feeding 'Stilbosol'"

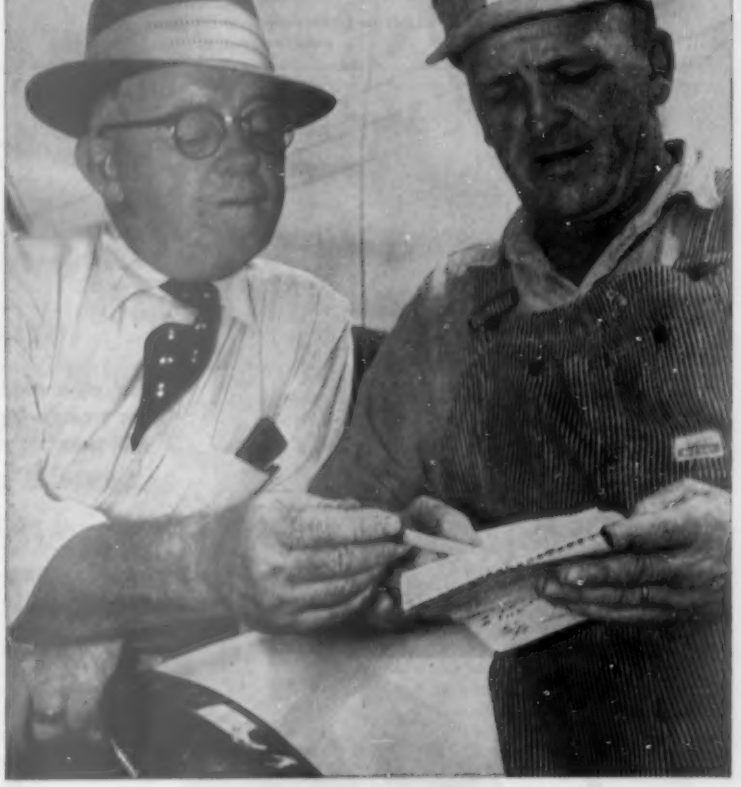
North Central Iowa feeder gets 2.5 lbs. daily gain (over 275-day feeding period) for 14.6¢ per pound. "I've had very good gains since feeding supplements with 'Stilbosol.' It has reduced my cost of gain by at least 4 cents a pound."

by Eugene S. Hahnel

On October 19, 1956, sixty Hereford steer calves averaging 428 pounds arrived at Kenneth Thompson's neat, efficient 152-acre farm near Alden, Iowa. After running on cornstalks for 30 days, they were brought into the fattening lot and fed a ration of oats, ground ear corn, and 2 pounds of supplement with 'Stilbosol.'

The oats were cut back after 90 days and the ground ear corn increased to full feed. A few weeks before shipping, they went on a ration of 19 lbs. cracked corn per head, 'Stilbosol'-fortified supplement, and oat straw free choice.

Result—big beef tonnage. Thompson is willing to guess weights with anyone . . . except at 9:00 a. m., the morning of every thirtieth day. Then he wants to *know* how his cattle are doing—down to the last ounce. So, onto his livestock scales they go. A few quick calculations, and daily gain and cost of gain are facts in his notebook of running accounts. After 275 days on feed, his figures showed average daily gains of 2.5 pounds, at a cost of only 14.6¢ per pound. Thompson credits 'Stilbosol'-fortified supplements with cutting his feed costs 4 cents per pound. "I feel 'Stilbosol' in my supplement gives me steady control over the amount of hormone my cattle get. That way, too, I don't disturb them any more than I have to."



Mr. Thompson (right) depends on his feed supplier, Byron Kier, for service and information. Here they check Thompson's month-end weight records. "I buy my feed in bulk and always get good delivery service," says Thompson. "Also, I like the farm tours and meetings my feed representative conducts."

The added value of 'Stilbosol' in the ration shows up best when feeders use the scale to help the eye. Thompson's practice of weighing steers every 30 days gave him proof that 'Stilbosol' in his rations saved him 4¢ per pound of gain. He's well satisfied.

Lilly products for the feed industry

PROCAINE-PENICILLIN-G
VITAMIN B_{12}
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'HYGROMIX'
(S. hygroscopicus Fermentation Products, Lilly)

'Stilbosol' and 'Hygromix' are sold only to the feed manufacturing industry.

Stilbosol
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Lilly

'Stilbosol' is Eli Lilly and Company's trademark for Diethylstilbestrol Premix which is manufactured and sold under exclusive license granted by Iowa State College Research Foundation, Inc., under its U. S. Patent No. 2731303.

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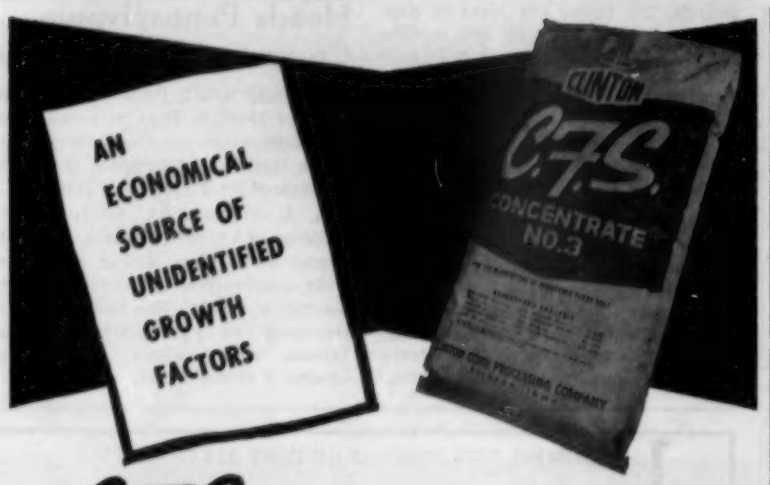

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You can partially replace or eliminate more costly sources of unidentified growth factors and other important nutrients. Lower-cost Clinton C.F.S. Concentrate #3 is a free-flowing blend of corn fermentation solubles dried on nutritious corn by-products. It's exceptionally potent in organic and inorganic growth factors, important B vitamins and quality proteins. Ideal for modern high-efficiency rations and for manufacturing registered feeds. For you, C.F.S. Concentrate #3 means more profit. For the feeder, improved growth and higher feed efficiency.

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ECONOMICS OF ADDING FAT TO FEEDS

By R. D. Calvert
Evergreen Mills, Inc.

EDITOR'S NOTE: R. D. (Bob) Calvert, nutritionist and controller for Evergreen Mills, Ind., Ada, Okla., says he feels that fat currently is too high in price to warrant use at a high level in feed. He outlines his thinking in the accompanying article. With the article he submits data based on the soybean meal, fat and grain portions of broiler rations, using four fat levels.

v v

The amount of fat that should be added to feed depends on its price relationship to cereal grains as a source of energy.

From the feed manufacturer's point of view, it is not how little feed it takes to produce a pound of meat, a dozen eggs or 100 lb. of milk, but what it costs the producer to get this gain.

One of the functions of a feed manufacturer is that of a purchasing agent for the farmer, purchasing at the lowest possible cost, ingredients that, when blended together in a complete feed, will perform the most efficiently in producing quality food products at the lowest possible cost.

The feed nutritionist, therefore, must also be an economist and must have enough latitude in formulating feeds to give the feeder the best feed buy at any time, based on existing market conditions.

Fat is an ingredient that may fluctuate in market price and therefore needs careful scrutiny in its use as a source of energy in feeds. At the present time, fat is too high to use at a high level in feed, although the writer thinks it is valuable even at the present price as a low level feed conditioner.

Four Fat Levels

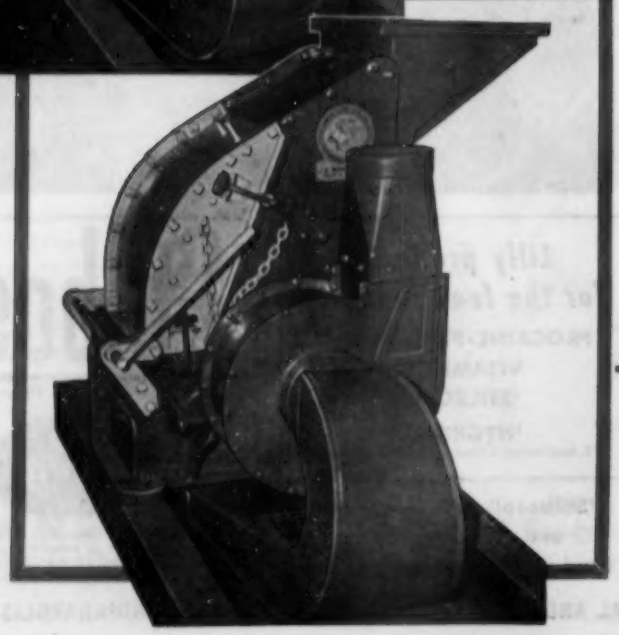
To illustrate the value of fat under recent market conditions in a broiler starter feed, we have formulated the soy meal, fat, grain portions of the ration, using four different fat levels, from a high extreme to normal fat level. This portion of the ration, although far from being a complete ration, will illustrate the economics of adding fats since these three ingredients usually make up 85% of the ration. (C/P ratios approximately 42 X 1.) (See Table 1 and Table 2.)

The formulas in Tables 1 and 2 have been greatly simplified in order to call attention to the more flexible portions of the ration and represent only 85% of a normal ration, but will clearly illustrate the need for nutritionists to keep their attention focused on cost per pound of gain of quality products produced.

Feed registrations should be based on minimum guarantees to allow for flexibility in increasing fat and protein as market conditions indicate from time to time. The feed manufacturer must always be conscious of his responsibility to the trust placed in him by the feeder, to give him the best feed for the least cost per unit produced.

Simple Formulas

Many other formula combinations could be used to illustrate the economics of feed formulation. However,



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For all-around heavy-duty grinding—for high-quality, high-volume production—for trouble-free performance and low operating cost—there is no better hammermill than the rugged, precision built Jay Bee Model W.

As illustrated at left, the "split top" on the Model W provides instant, easy access to screen and hammers without disturbing the mill feeding set-up—a particular convenience when the mill is operating with a drag chain or other method of continuous feeding.

Every Jay Bee gives you *"Texture Grind"* . . . .
Horsepower for horsepower, screen for screen, a Jay Bee Hammermill will produce a finer, more uniform texture of grind than any other hammermill made.

The Jay Bee Model W is available in three sizes—feed opening from 15½" x 12" to 26" x 12"—from 50 to 200 HP—with or without separate fan motor—with flat belt, V belt, or direct motor drive. To find out what it can do for **you**, just mail this convenient coupon—TODAY!

For faster grinding at lower cost a Jay Bee mill will give you most!

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TABLE 1. Using 44% Protein Soybean Meal

Ingredient:	1	2	3	4
Solvent soymeal	69	58	48	42
Fat	31	20	10	4
Gr. yellow corn	..	22	42	54
Total (85%)	100	100	100	100
Prot. (85% Portion)	30.36	27.46	24.82	23.23
Calories per lb.	1279	1152	1037	968
Est. calories/lb. gain*	2226	2226	2226	2226
Expected total feed required per lb. gain†	1.74	1.93	2.15	2.30
Feed per cwt.‡	5.12	4.55	4.04	3.73
Basic portion feed cost per lb. gain¶	.0891	.0878	.0869	.0858

*The figure of 2226 cal./lb. was used in all illustrations for sake of uniformity. 2226 cal./lb. gain is based on the average obtained on rations at the writer's research farm containing from 4 to 10% added fat. This figure correlated with rations 2a with 3.8% fat and 2b with 18.8% fat as shown in Table 4, Poultry Science, July, 1957, Volume 136, No. 4, "Studies on Energy Levels in Poultry Rations" by W. E. Donaldson, G. F. Combs, G. L. Romoser and W. C. Supplee. 4.68 cal./gm. gain and 4.67 cal./gm. gain on seven weeks are 2125 cal./lb. gain and 2120 cal./lb. gain. Average weights 2.53 and 2.60. Adding one additional week and .4 lb. live weight will increase total feed requirement by 5%. 105% of 2125 and 2120 is 2231 and 2226, which is in agreement with our own figures.

The calorie requirement-to-gain figures on ration No. 1 are probably low as compared to ration 2d referred to above by Donaldson, Combs, Romoser and Supplee, as on their ration containing 33.8% fat, the calories per pound of gain were 2592 at seven weeks. However, for sake of uniformity the 2226 figure was used to illustrate equal energy to gain values and cost of gain.

†Expected total feed required per pound gain is calculated by dividing the 2226 calories required for a pound gain by the productive energy of the ration.

‡Cost if the 85% portion of feed includes $60 a ton on soy meal, $51.20 a ton on corn, $145 a ton on fat, plus $16 manufacturing, applied by Dr. G. F. Combs of Maryland in his recent test.

¶Does not include the cost of vitamins, minerals, animal proteins, unidentified factors and medication costs.

in using most other ingredients, calculations get more complicated. For instance, meat and bone meal furnishes in addition to energy and protein, vitamin B_{12}, calcium and phosphorus in general levels. Corn gluten meal, in addition to energy and protein, furnishes generous levels of vitamin A, methionine and energy. Hydrolyzed poultry feathers furnish a generous amount of protein and energy but are comparatively low on all other nutrients. Simple formulas can save time in evaluating ingredients for protein and energy. Fish meal can be used to illustrate this by using protein, energy, calcium and phosphorus in a simplified incomplete formula. (C/P ratio 42X1. Calcium 1.00%, phosphorus .6%.) (See Table 3.)

TABLE 2. Using 50% Protein Soybean Meal

Ingredients	1	2	3	4
50% Prot. soymeal	66	55	45	38
Fat	34	22	10	4
Corn	..	23	45	58
Total (85% ration)	100	100	100	100
Protein	33.00	29.52	26.46	24.10
Calories per lb.	1408	1255	1096	1026
Est. cal./lb. gain	2226	2226	2226	2226
Expected total feed per lb. gain	1.58	1.77	2.03	2.17
Feed cost per cwt.*	5.58	4.91	4.25	3.90
Feed cost per lb. gain	.0881	.0869	.0863	.0846

*Using previous costs plus $10 a ton premium on 50% protein soymeal.

TABLE 3. Simple Incomplete Formula

Ingredients:	Ingredient cost	1	2	3	4
Solvent, soymeal	3.00	34 %	26.5%	17 %	6.5%
Fish meal (sardine)	7.20	2	8	16	24
Ground yellow corn	2.56	61.7	64	66.5	69.5
Calcium	.54	1.1	1	.5	
Defluorinated phosphate	3.87	1.2	.5		
Total		100 %	100 %	100 %	100 %
Protein		21.69	22.49	23.73	24.58
Calcium		1.01	1.00	1.00	1.16
Phosphorus		.65	.64	.72	.88
C/P ratio		42 X 1	42 X 1	42 X 1	42 X 1
Calories/lb.		918	953	996	1040
Est. cal./lb. gain from Table 1		2226	2226	2226	2226
Feed/lb. gain*		2.42	2.34	2.23	2.14
Cost per cwt. of ration		2.80	3.03	3.37	3.70
Est. simple formula cost per lb. gain (broilers)		.0678	.0709	.0752	.0792

*Found by dividing 2226 by cal./lb. of feed.

As prices fluctuate in ingredients, simple formulas will help us decide what ingredients to keep or discard in feed formulations, keeping in mind plus factors not accounted for in these formulas such as unidentified factors, vitamins and amino acid balances.

Two Cooperatives May Combine in Wisconsin

MINNEAPOLIS, MINN.—Two midwestern cooperatives are studying the possibility of combining forces, according to a joint announcement by Curtis Hatch, Madison, Wis., president of Wisconsin Farmco Service Co-op, and J. F. Shea, Pickett, Wis., president of Midland Cooperatives, Inc., Minneapolis.

Farmco has 52 member cooperatives with 132 retail outlets in Wisconsin. Midland has 173 member cooperatives in Wisconsin and also serves other member cooperatives in Iowa, Minnesota, and North and South Dakota.

Farmco's total sales last year amounted to $11.8 million, while Midland's volume was $43.6 million in the year ending Aug. 31. About 40% of Midland's volume was with cooperatives in Wisconsin.

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IRRIGATED DRY YEAST
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The unique principles developed by TRIUMPH Engineers for the TRIUMPH No. 1200 Corn Sheller have produced superior performance and high shelling rates in the high moisture corn areas of the East, and the Southern Snapped Corn Areas of the South as well as the machine picked corn areas of the Corn Belt. That these principles have produced outstanding results is demonstrated by the wide acceptance and popularity of the TRIUMPH No. 1200 Corn Shelling System by commercial corn handling plants in the very areas where corn shelling problems were the most troublesome in the past.

Along with the development of better corn shellers, TRIUMPH Engineers and Distributors have helped solve many problems relating to handling and shelling ear corn from the dump pit to the cob bin.

The valuable experience of TRIUMPH in this specialized field is a plus value gained only in buying TRIUMPH.

Check these new patented principles of sheller design developed by TRIUMPH Engineers:

A—Rugged Shelling Cylinder—improved design—carefully engineered for maximum movement and agitation of material assuring thorough shelling and separation by centrifugal force. B—Every inch of area around the shelling cylinder is actively used to screen out shelled corn—with highest efficiency yet obtained in shellers. C—Area between shelling cylinder and screen enlarged to provide high shelling rates and allow foreign material to pass with minimum or no damage. D—Curved Comb Bars control rate of flow internally to assure full separation of corn from cobs. E—Automatic control of discharge rate. F—Pneumatic trap for foreign material to eliminate cob blower damage. G—"Push-Pull" cleaning thoroughly controls aspiration of shelled corn as it discharges from sheller. H—Separately powered, high capacity cob blower with flexible positioning engineered into the shelling system.

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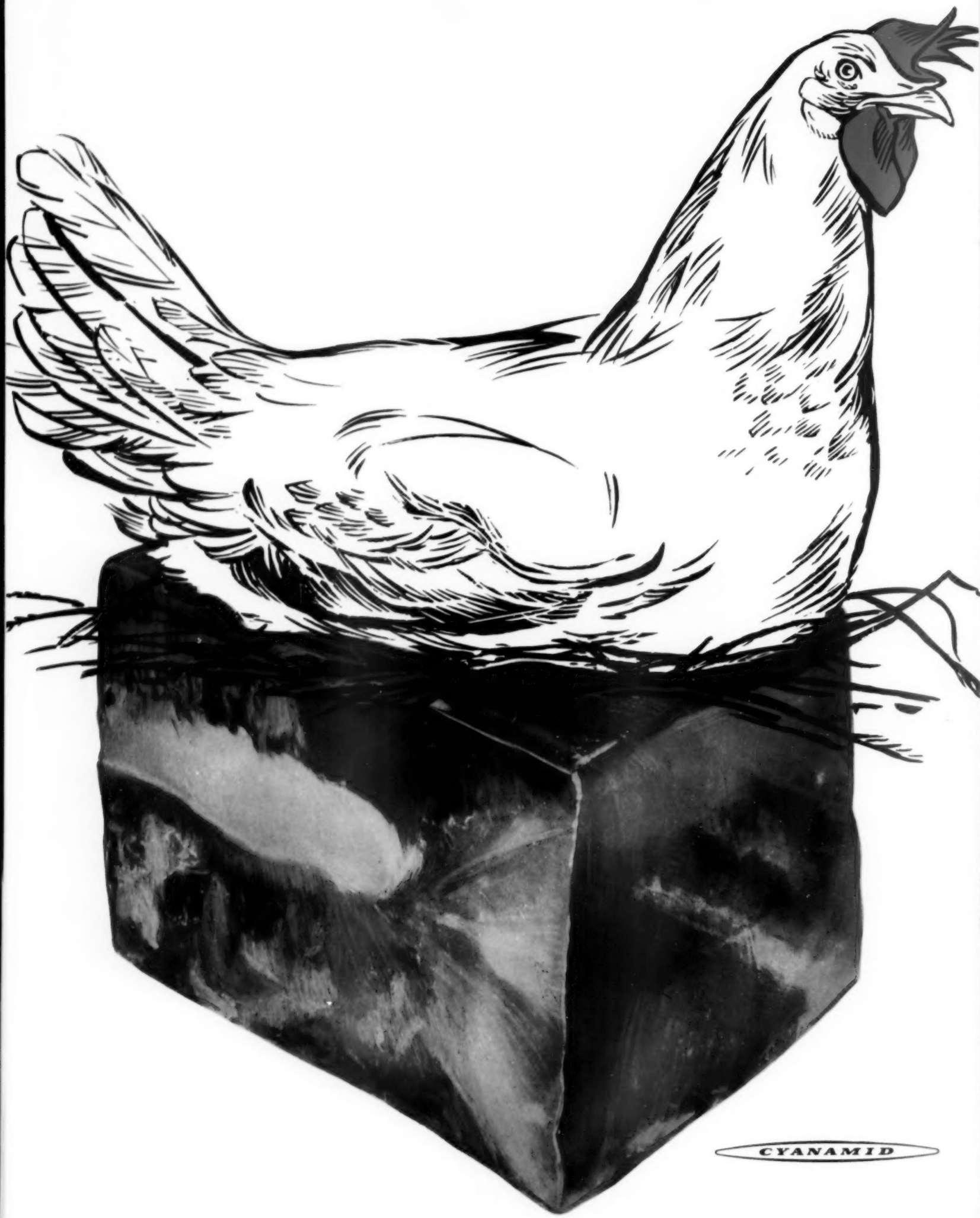

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When the temperature plunges down below freezing – that's the time when hens really need protection to *keep on laying well and bringing in egg profits.* Your feeds can give *that* protection.

Tests have shown that the *right* amount of AUREOMYCIN in good layer feeds gives hens more vigor to withstand the stress of cold weather – helps prevent laying slumps.

In a trial at Iowa State College during the winter months, a group of low-producing hens was placed on layer feeds containing AUREOMYCIN. During the next 60 days, these hens showed an average increase in egg production of 39%.

AUREOMYCIN steps up egg production even if layers are consistent high producers. It is particularly effective in bringing hens out of laying slumps – in keeping the level of egg production up when hens show signs of "colds," and in maintaining production in the presence of such diseases as CRD and blue comb. Recommend to your customers the continuous use of *your* layer feeds containing the *right* amount of AUREOMYCIN. ANIMAL FEED DEPARTMENT, FARM AND HOME DIVISION, AMERICAN CYANAMID COMPANY, NEW YORK 20, NEW YORK.

Good layer and breeder feeds with the right amount of AUREOMYCIN provide your customers with:

More eggs over a longer period.
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More eggs in the presence of disease.
More eggs in times of stress.
More chicks from increased hatchability.

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- Prater Hay and Grain Grinders
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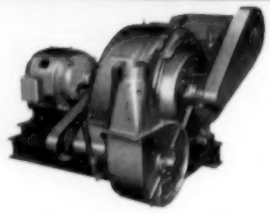
- Prater Crusher-Feeder for Shucky Corn
- Magnetic Separators
- Prater Double Chain Drag Feeder
- Grain and Attrition Mill Blower
- Prater Cob Crusher
- Blue Streak Dual-Power AC Mill
- Prater Packaged Mill
- Rotary Airlock Feeders
- E. Z. Truck Hoist



1. Prater Blue Streak Advance Custom Mill

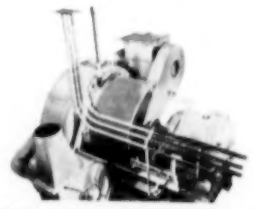
2. Blue Streak Twin Spiral Mixer

3. Blue Streak Dual-Degree Drag Feeder

4. Blue Streak Corn Cutter and Grader

5. Blue Streak Vertical and Horizontal Screw Conveyors

6. Prater Hay & Grain Grinder



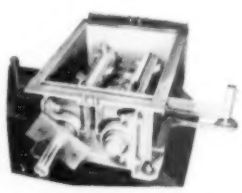
7. Blue Streak Advance Custom Mill with Pratermatic Screen Changer

8. Prater Crusher-Feeder for Shucky Corn

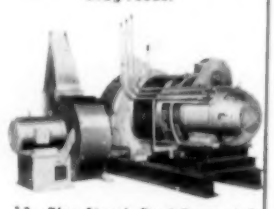
9. Prater Double Gap Permanent Magnet

10. Blue Streak Double Chain Drag Feeder

11. Blue Streak Grain and Attrition Mill Blower



12. Prater Cob Crusher



13. Blue Streak Dual-Power A.C. Mill with Pratermatic Screen Changer

14. Prater Automatic Package Mill

15. Prater Rotary Airlock Feeder

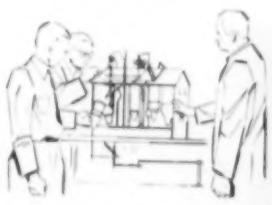
16. Prater Blue Streak Dual Screen Pulverizer

17. Prater Gradual Reduction

18. Prater Fibre Grinder with Separate Fan

19. Prater Blow-Thru Rotary Air Lock Feeder

20. Prater Fibre Grinder with Fan on Rotor Shaft



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These Prater *plus values* are the result of over thirty successful years as a major supplier to the custom milling field in addition to diversified experience and research in allied industries. From such multi-industry background has come the development of processing equipment which makes possible the product uniformity and floury-free grinding exactness of Granular Grind.

For example, 80% of soybean protein is ground and processed in Prater Blue Streak Mills. Many of the largest processors use Prater equipment exclusively.

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Flax Stocks Oct. 1 Smallest of Record; Disappearance High

MINNEAPOLIS—A drastically reduced flax crop estimate and record disappearance of flaxseed during the first quarter of the 1957-58 crop year were reported recently by the U.S. Department of Agriculture in its flaxseed market summary prepared in Minneapolis.

Disease during the growing season and heavy rain at harvest in flax areas cut the crop prospect from 47.4 million bushels in July to 27 million in the October estimate. The yield per acre, indicated Oct. 1, is 5.1 bu., the lowest since 1936.

Added to this was a strong disappearance of 18.1 million bushels during the first quarter—more than double the disappearance of 8 million in the first quarter last season, and 62% over the five-year average of 11.2 million bushels. It was the highest disappearance of record.

Crushings of flaxseed for oil the first quarter were the second largest since 1950. They totaled 9.4 million bushels. These crushings compare with 4.2 million during the comparable period last year and 8 million for the five-year average. Exports of flaxseed, mainly from CCC stocks, totaled 7.8 million bushels the first three months of the season. Exports the first quarter last season totaled 1.7 million.

Stocks of flaxseed Oct. 1 at 28.4 million bushels were the smallest in 11 years of record, and compare with 44.9 million a year ago.

No increase in the price of linseed meal has occurred, but some observers feel that the first heavy snowfall which normally creates better feed demand, and completion of oil commitments by Jan. 1 will firm up the price.

Integration, Direct Buying Affect Market

COLUMBIA, MO.—Far-reaching changes taking place in the livestock and meat industry may have reduced the voice of the cattle feeder in determining the price he gets for his cattle, according to Earl Coke, vice president of the Bank of America and former assistant secretary of agriculture.

Vertical integration, establishment of large feeding yards by packers, and direct buying have changed the pattern of marketing, Mr. Coke noted in a recent talk before the American Meat Institute, which was quoted by the University of Missouri publication, Missouri Farm News.

In a review of the industry, Mr. Coke pointed to the disappearance of the corner grocery store and butcher shop. Large supermarkets now serve in their place. Consequently, he said, relatively few buyers buy the meat requirements for a majority of the retail outlets.

To get a steady supply of good and choice cattle demanded by these large retail outlets, many packers have gone directly to feed yards either to feed their own cattle or to get finished cattle from other feeders.

This leaves only a relatively few buyers at the wholesale level, he pointed out, and with the resulting decreased relative numbers of quality cattle going into the central yards, the question arises as to the role of the central market in determining the price of quality cattle purchased from feed yards. He further asked: "Who sets the price for quality slaughter cattle today?"

Commenting further on other factors contributing to the situation, Mr. Coke said, "When purchases are made at the central yards, buyers are bonded to pay for cattle within 24 hours of the time of purchase. However, with heavy country buying, some packers operate on the floating capital of feeders and producers.

"Not only does this practice allow the buyer to get himself into a rather vulnerable position financially, but it forces the feeder to continue paying interest on borrowed capital after the cattle—the lender's security—have passed from the feeder's control.

"By various devices—such as killing on consignment—a few packers have been able to transfer to feeders and producers risks which the latter are geared neither to bear nor control. And, of greater concern, it places these same packers, who bargained with the wholesaler and retailer for the price of carcass beef, beyond the impact of that price.

"Under the situation no one represents the feeder's interest at the bargaining table," Mr. Coke stated. "In effect, the packer is playing the role of the commission house while at the same time performing the service of slaughtering the animals."

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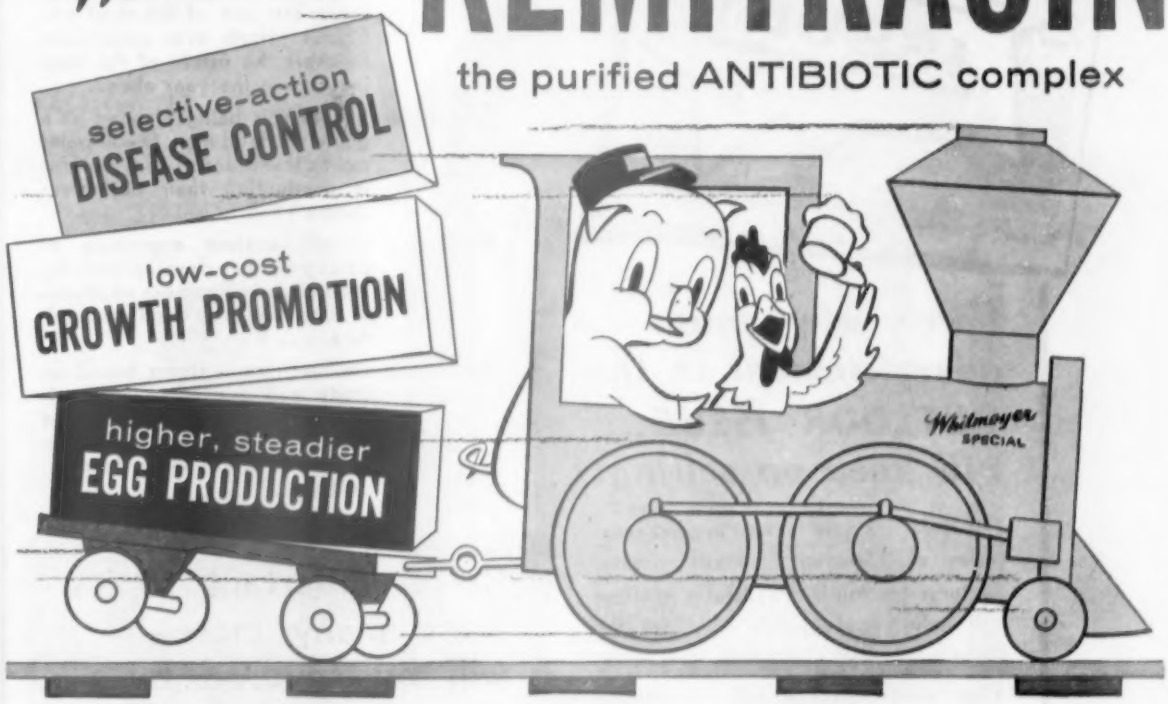

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Kemitracin fights disease with *selective action.* By concentrating on the dangerous disease-producing bacteria, the beneficial types responsible for the synthesis of vitamins and other unidentified growth factors are left unharmed.

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Because staff-written features based on study and evaluation of pertinent information will help feed men in making plans to keep in step with the dynamic feed industry. . . .

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- Outlook for integration in livestock operations. . . .
- Outlook for changes in animal and poultry nutrition concepts. . . .
- Outlook on demand for various types of formula feeds. . . .
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REMEMBER THESE DATES:

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December 16, 1957

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USDA Reviews Soybean Situation

MINNEAPOLIS — Despite a new record soybean crop and supply for the 1957-58 feeding season, solvent soybean meal at Decatur averaged $46.75 ton, bulk, during the month of October, the Minneapolis grain division office of the U.S. Department of Agriculture points out.

The price is an advance of around a dollar from a year earlier. Soybean meal averaged $47.50 last season, a drop of $5 a ton from the previous season.

Crushing of soybeans for oil totaled 316 million bushels during the 1956-57 season, according to the Bureau of Census. This is the largest of record. It compares with 283 million the previous year and 249 million in 1954-55. The outturn of oil per bushel was 10.9 lb. in 1956-57, as compared to 11.1 lb. the previous year and 10.5 for the average.

Exports of soybeans last season totaled nearly 85 million bushels, an increase of 17 million over the previous record in 1955-56. Exports of soybean oil at 805 million pounds were also a record high, with a large portion exported under P.L. 480.

Soybean prices last season ranged from a low of $2.19 bu. in September, 1957, and $2.21 in October, 1956, to a peak of $2.43 in January. Prices last season at Illinois plants averaged $2.33 bu., compared with $2.51 in 1955-56. Last season farmers put 65.7 million bushels under price support, compared with 30.1 million from the 1955 crop. Farmers delivered a little over 27 million bushels to the CCC, of which all but about 2 million bushels had been sold by Oct. 1.

Supplies for the 1957-58 feeding season are at a new record of 497 million bushels—37 million more than last year, the previous record.

Carryover stocks of 9.9 million bushels were double the 10-year average, and production this year at 487 million bushels on the basis of conditions Oct. 1 is also a record.

Increase in Freight Rates Authorized

COLUMBUS, OHIO — The Public Utilities Commission of Ohio has authorized a general increase of 7% in Ohio railroad freight rates, subject to specified exceptions and hold-downs.

It was estimated that the increase, plus one granted earlier this year, will mean about $4 million in additional revenue yearly to the railroads.

The commission action followed that of the Interstate Commerce Commission, which last month granted a similar increase.

The railroads a year ago asked both PUCO and ICC for a 15% rate increase. The next month they asked for a 7% emergency increase, which was granted. The emergency increase went into effect in Ohio Feb. 14. Ohio has 17 railroads operating in the state, but only 10 are considered "principal operators."

The rate increase for coal amounts to 15¢ a ton, part of which went into effect under the emergency increase. Total increase for grain and livestock products is 9%.

Hourly Earnings Up

SAN FRANCISCO — Production workers in grain processing plants in California increased their average hourly earnings from $2.21 to $2.30 per hour between September, 1956, and September, 1957.

The division of labor statistics and research estimates that the workers earned at the rate of $97.80 a week during that month, as compared with $96.08 the previous September. The length of the average work week was estimated at 42.5 hours, compared with 43.4 for the previous year.

Boston Poultry Show To Run Four Days, Adds New Features

BOSTON — The combined Boston Poultry Show and New England Poultrymen's Conference will be a day longer in 1958.

The Northeastern Poultry Producers Council, sponsor of the event, has announced that the show will run four days—Jan. 22-25—and it will have some other innovations as well.

Some of the speakers now being lined up for the show will appear in the evening of Jan. 22 and also the evening of Jan. 24. Another new feature is the display of sample flocks by commercial poultrymen, similar to those held at NEPPCO's annual expositions. This will be coupled with a display of equipment, breeds, services and feeds.

Another attraction this year is a display that will show Boston's consumer's how their eggs are produced. Directed by John Hough, Massachusetts extension poultry specialist, the display will portray the pathways of quality eggs and poultry from the hatching egg right through the packaging and marketing. Included in the display will be a model block of 50-odd birds in a modern, fully equipped house, an egg grading and holding room, and a model retail sales room.

Plans also call for the distribution of barbecued chicken to persons visiting the show.

Jan. 23 is turkey day for the show. A special educational program is lined up for the day, with the subject matter and information geared to needs of the area's turkey producers. New England turkey breeders will hold a meeting that night.

Speakers for the show and conference are being secured now. Plans call for one major speaker each day.

Alabama Feed Sales Show Big Increase

MONTGOMERY, ALA.—Total feed tonnage sold in Alabama in September was up some 16% over the same month a year ago, the Alabama Department of Agriculture reports.

The total was 80,215.56 tons, up nearly 10,000 tons from last year. Horse and mule feed, oil meals and molasses had smaller sales than a year ago, while other feeds increased in volume. Poultry feed showed an increase of 23% over September, 1956. (See table.)

While Alabama mills produced 56% of the total feed sold, the state is not yet producing as much poultry feed as is coming in from out of state. Of the total sales of 46,206 tons of poultry feed, 26,176 tons came into Alabama from out of state.

Cumulative totals of all feeds sold for the first nine months show a tonnage of 879,771.49, compared to 805,645.53 for the same period last year. The nine-month total shows that poultry feed sales, at 506,877.92 tons, are 14% more than for the same period last year, and are 57% of the total feed sales for the period.

Feed Tonnage Sold in Alabama in September as Compiled From Monthly Reports of Manufacturers Using the Monthly Reporting System

Varieties:	—September— 1957 tons	1956 tons
Horse and mule feed	1,159.37	1,338.79
Hog feed	4,438.28	4,000.62
Dairy feed	7,505.02	6,790.48
Poultry feed	46,206.92	37,751.59
Oil meals	8,948.84	10,158.36
Cereal by-products	1,544.43	1,371.97
All other feeds	9,403.32	6,894.33
Molasses	1,009.38	2,042.83
Total	80,215.56	70,348.97

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5 Does your product cost warrant redesigning your bag to merchandise your product more effectively?
6 Are you using the most economical filling machine available for packaging?
7 Are your current suppliers giving you the service you desire?
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Favorable Competitive Position Predicted for New England Eggs

BURLINGTON, VT. — "New England egg producers will remain in a favorable competitive position with the Midwest," said Frank Reed, Maine extension poultry marketing specialist, in Burlington recently.

Speaking at the conclusion of a two-day extension county agricultural agent poultry refresher course, Mr. Reed explained that statistics don't support the pessimism that has haunted New England poultrymen for 30 years.

"Since 1940, New England has increased its number of laying birds by 44%, while nationwide there has been a 5.5% drop," he said. "In the broiler business, New England has increased nine-fold and the nation has increased eight-fold.

"Our big advantage in marketing is location. U.S. Department of Agriculture research showed that marketing costs from a Minnesota farm to a District of Columbia store were between 16 and 17¢. The typical New England margin is 10¢.

"We do pay more for feed. The difference in ration is from $10 to $15 a ton. That means New England poultry feed cost is about 3 or 4¢ more per dozen eggs than for Western poultrymen," he said.

"I doubt that the egg business will follow our New England broiler business into integration where producers operate under a contract system. Integration offers the advantages of financing and quality control.

"The answer to this will be to develop a sound system of financing for independents and to get coordination between producer and marketing to develop a quality control program.

"I predict that we will come to some sort of a system of marketing agreements between producers and their private and cooperative marketing agencies."

Mr. Reed recommended a four-point quality control program for table eggs. He urged: A system of paying for eggs by grade; a system of approved egg rooms on farms; approved uniform cleaning methods, and frequent farm pick-ups by handlers.

"It is possible in the future that a fifth point will be added in a quality control program. This would see controlling the strain and age of producing birds to get the best possible quality," he predicted.

New Hampshire Plans Poultry Health Meet

DURHAM, N.H. — Outstanding poultry authorities from many parts of the nation will speak on subjects of interest to the industry at the seventh annual New Hampshire Poultry Health Conference here Feb. 6-7, according to W. C. Skoglund, University of New Hampshire poultry department head.

He announces the following program details: Bluecomb and non-specific enteritis by Dr. B. S. Pomeroy, head, division of veterinary bacteriology, University of Minnesota; latest information on epidemic tremors by Dr. Kermit Schaaf, Kimber Farms, Inc., Niles, Cal.; avian infectious hepatitis by Dr. Sevoian, University of Massachusetts, and new coccidiostats by Dr. E. F. Waller, University of Delaware.

A panel on "the lateest information on the use of antibiotics" will present Dr. Harold Chute, University of Maine, who will discuss the disease aspects of the topic, while Dr. E. P. Singsen, University of Connecticut, will speak on antibiotics and their use from the viewpoint of the nutritionist.

A talk on infectious synovitis will be presented by Dr. Norman O. Olson, University of West Virginia.

A group of New Hampshire poultry breeders will take part in a panel on "progress made in pleuro-pneumonia-like organism (PPLO) negative breeding flocks." It will be moderated by Richard Strout, UNH assistant extension poultryman.

Dr. W. R. Dunlop, UNH research pathologist, will discuss his latest research findings.

The conference will be held in the new University Memorial Union Building on campus. Complete programs and registration blanks will be mailed later this fall to those interested.

BUYS PORTABLE MILL

LAKE PARK, IOWA — Woodrum Farm Supply, Lake Park, announced recently that it has purchased a Melos portable mill to expand its service.

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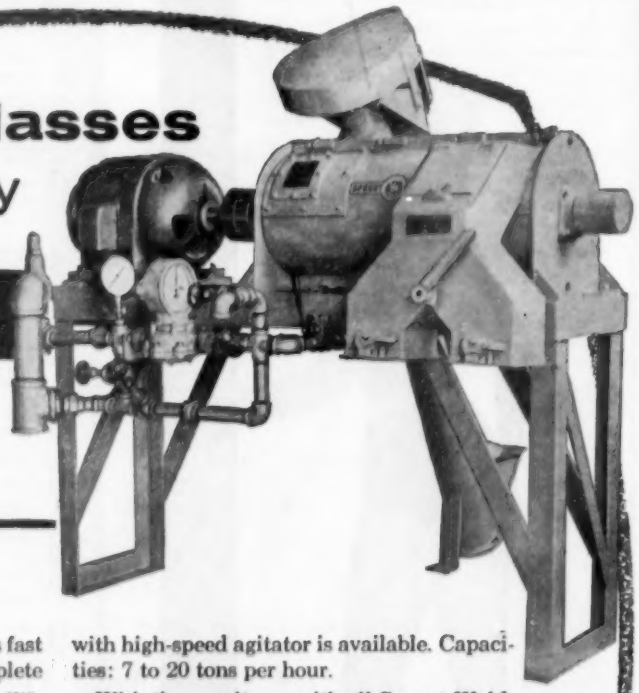
SPROUT-WALDRON CUSTOMIX with the Big Plus



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The direct-connected, high-speed agitator assures the production of 3 to 5 tons per hour of lump-free, high-quality feed. Molasses is actually driven into the fiber of the feed without heating at the correct percentages. Furnished complete with motor-driven pump and strainer, and gauges, valves, and meter in place on a supporting frame.

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Write for Bulletin 98 (Customix), Bulletin 121 (Coldmix).

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$4.00 a year* to keep abreast of the rapidly changing Feed Industry.
*Less than 8 cents per week for 52 issues of . . .
FEEDSTUFFS

ONE OF AMERICA'S LARGEST PRODUCERS OF DRIED MOLASSES CONCENTRATE . . .

announces a dynamic new sales-aid program for a guaranteed product . . .

HI-MO-LASS

BLACK STRAP MOLASSES WITH CORN OIL MEAL OR SOYBEAN MILL FEED AS DESIRED.

WITH CORN OIL MEAL

GUARANTEED ANALYSIS

Crude PROTEIN, not less than	6.5%
Crude FAT, not less than	0.6%
Crude FIBRE, not more than	4.5%
Total Sugars (invert sugars) 42.5% or more	

WITH SOYBEAN MILL FEED

GUARANTEED ANALYSIS

Crude Protein, not less than	8.00%
Crude Fat, not less than	.35%
Crude Fiber, not more than	15.00%
Invert Sugars, not less than	42.5%

JOBBERS WANTED !

Write Today For More Information About This Great New Sales Program Plus Free Sample Of Free-Flowing HI-MO-LASS

Gentlemen:

I am interested in receiving more information about your PROGRAM FOR HI-MO-LASS JOBBERS. PLEASE INCLUDE FREE SAMPLE. SEND INFORMATION TO:

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MAIL TO: **DOANE FEED PRODUCTS CO.**
P. O. Box 1108 — Joplin, Mo.

DOANE FEED PRODUCTS CO.

JOPLIN, MISSOURI

Jack Davis Says . . .

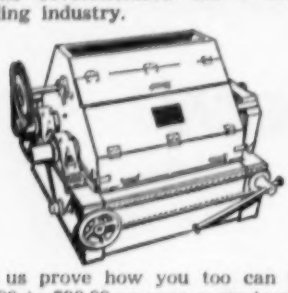
DON'T

face another season without a

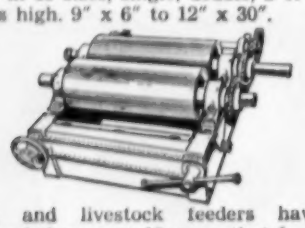
KRIMPER-KRACKER Grain Roller!

(Reg. U.S. Pat. Office)

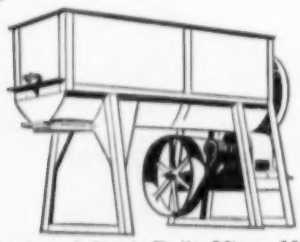
Other millers by the hundreds have been reaping a fabulous harvest of new profits since dust-free rolled grains revolutionized the livestock feeding industry.



Let us prove how you too can add $10.00 to $30.00 or even more to your hourly profits and run your custom milling department 8 to 10 hours daily with a Krimper-Kracker, available in 15 sizes, single, double, 2 or 3 pairs high. 9" x 6" to 12" x 30".

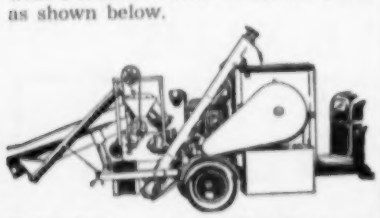


Yes, and livestock feeders have learned these past 10 years that free-choice, or hit or miss feed mixing is barn-lot bankruptcy. Their profits are secure when **and only when,** COMPLETE balanced rations are fed!



This famed Davis-Built Mixer 100% accurately blends chopped hay, ensilage, etc., into rolled or ground grains, with minerals, supplements, pellets, molasses, etc.

The incomparable Davis Ear Corn GRANULATOR obsoleted other methods of processing corn and cobs. Wide-awake millers are going out to the feed lots AFTER the business with Portable Davis Combined Units as shown below.



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Box F. H. 185, Bonner Springs, Kan.

Washington State Reports Swine Feeding Studies

PULLMAN, WASH. — Limited-fed hogs out-performed their full-fed brothers in various ways in a 10-year study of the effect of diet on 10 generations of swine, according to Dr. S. H. Fowler of Washington State College. He reported on the test, involving 1,705 animals, at the college's annual Swine Day.

Dr. Fowler told the group that the "lean hungry hogs in the study grew taller, produced more meat per pound of feed and produced and weaned more pigs than the full-fed fat hogs. The hungry hogs were fed only 70% as much as their full-fed kin. The full-fed hogs excelled in only one phase of the study. They put on weight faster and, of course, got fatter."

The study, financed by a grant from Swift & Co., was started in 1947. The college's new swine breed, the Palouse, a Danish Landrace-Chester White cross, was used throughout the study. Goal of the research was to learn the effect of diet on fertility, production, type and ability to transmit these traits.

In the study, one line was full-fed from weaning to 50 lb.; the other line was fed 70% of the full diet. After six generations, one half of the pigs in each line were shifted to the other plane of nutrition, thus forming four lines. These included high-high—or full-fed for the 10 generations; low-low, or underfed for the entire study; high-low and low-high.

When the under-fed pigs were shifted to full-feeding (low-high) they gained faster and put on more meat per pound of feed than the pigs that had been full-fed from the beginning of the study. The pigs under-fed throughout the study also outperformed the pigs started out on full feed and then shifted to low feed (high-low).

Dr. Fowler said the study shows that swine breeders do not need to feed hogs all they can eat for most efficient production. Also, better selection of top sires and sows for foundation stock can be made if these animals are kept a bit on the hungry side, he said.

The WSC animal scientists also described a study under way to determine the influence of thyroid activity on reproduction. A small preliminary study, Dr. Fowler said, indicates that thyroxin has an important bearing on the size and vigor of the litter and the number of pigs weaned. The experimental sows given thyroprotein to step up thyroid activity produced strong healthy pigs that gained weight rapidly. Sows given a thyroid inhibitor (thiouracil) produced pigs so weak that most of them died before they were weaned, he said. Critical period for thyroid activity, he said, seems to be in the last half of the gestation (pregnancy) period.

"If we can determine the optimum amount of thyroxin required for development of healthy embryos, we can wipe out the large pig mortality losses now ranging up to 40%," Dr. Fowler said. He said that a larger-scale study is now in progress.

NEW DESIGN—Hess & Clark, Inc., Ashland, Ohio, has created a new package design for its line of animal health products and feed medication products. The design features a red chevron as background for an "H" set off with a yellow barn and yellow microscope. The background color is light yellow with the exception of a white band at the top.

Karl Hobson, college economist, said that favorable hog prices can be expected until the fall of 1958.

Hog prices should stay higher than a year earlier for a short time, he said. However, more declines can be expected, reaching the low probably in December.

Prices will not advance as sharply this year as last.

Prices in the first nine months of 1958 will be lower than in the same period this year, although they will still be favorable, Mr. Hobson said.

He had a gloomier forecast for the last quarter of 1958 and all of 1959. If spring farrowings in 1958 increase as much as now seems likely, prices will dip sharply in the fall of 1958 and be lower during most of 1959. They should start improving some time in 1960.

Mr. Hobson said that there is more money in feeding barley to hogs in Washington now than in feeding corn to hogs in the Corn Belt.

FIRE DESTROYS PLANT

CORDELE, GA. — Fire destroyed the Cordele Feed & Flour Co. recently, with damages estimated at $100,000. It is believed the fire started when a piece of metal got into the corn sheller when it was running.

J. H. LEFTWICH & CO., Inc.

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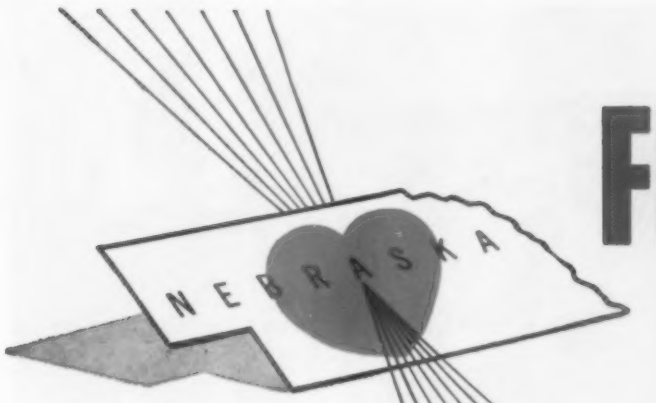

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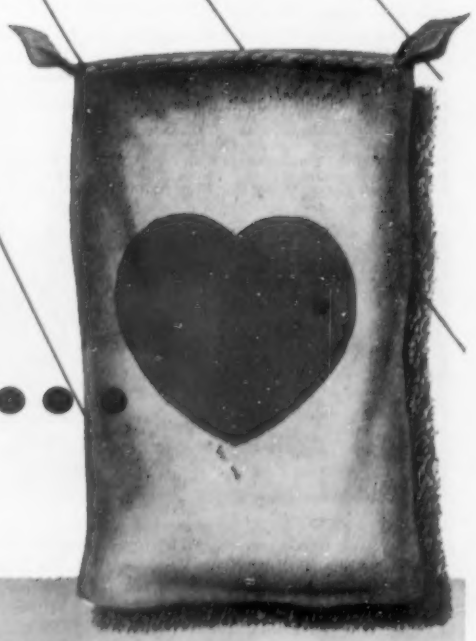

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CONSOLIDATED BLENDERS, INC.

FREMONT, NEBRASKA

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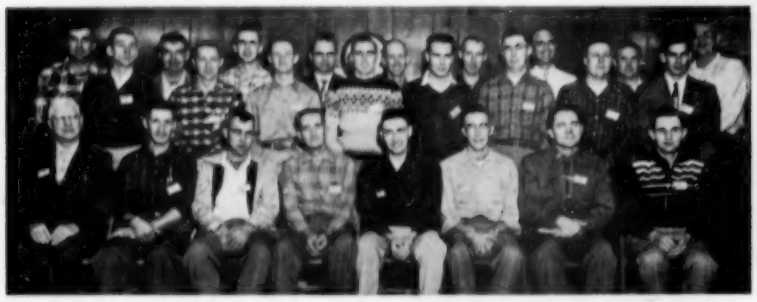
Camera Views of the News

ACCEPTS OSCAR—Allan J. Greene, administrative vice president of Chas. Pfizer & Co., Inc., accepts a bronze Oscar from R. J. Anderson, editor and publisher of Financial World, for the best annual report advertisement in the chemical products industry. The award was presented at the magazine's 17th annual awards banquet at the Hotel Statler, New York. Representing a "pioneering" technique in financial journalism and corporate advertising, the prize-winning report, containing 16 magazine-size pages—eight with four-color illustrations—was distributed as a supplement in Sunday issues of the New York Times, the Chicago Tribune, and the Los Angeles Times. The newspaper edition of the report was identical in format and content to one mailed several weeks earlier to the company's 24,000 shareholders.

WELCOMING COMMITTEE—Honeggers' & Co. was host recently on a good will tour of its branch plants to 24 businessmen and farmers. A welcoming committee was on hand at the Taylorville, Ill., airport (the group made the 900-mile tour in six planes). The welcoming committee included S. F. Spurling (left), Chamber of Commerce president; Sam F. Kennedy (second from left), general manager of Honeggers' Power Scoop Corp., Taylorville, and Mayor Thomas Sweeney (right). Plane occupants (left to right) were Sam R. Honegger, banker Dan Folmer of Forrest, Ill., banker John Gerber of Fairbury, Ill., and E. F. Dickey, executive vice president and general manager of the Feed & Farm Buildings Division. Other visits were made at Indianola, Iowa, where the firm operates a feed plant, and at Onawa, Iowa, where farm buildings are fabricated.



ATTEND HUBBARD COURSE—Twenty-five feed dealers from four states and employees of the Hubbard Milling Co. attended the first fall course in poultry and livestock feeding and management at the Hubbard Sunshine Research Farm at Mankato, Minn. Company personnel who conducted the training course were George Patrias, director of research and nutrition, and Carl Todtleben, his assistant; Vern Lundin, director of advertising and public relations; Don Madden, sales manager of the Mankato division; and Barney Schorer, assistant sales manager. Certificates were presented by Ogden Confer, vice president and manager of the feed division. (All persons pictured are from Minnesota communities unless otherwise stated.)

First row, left to right: Leo Hager, Lanesboro; Dick Wagner, Ada; Albert Marthaler, Hewitt; Al Vroonland, Boyden; Elden Goeke, Elmore; Loren Woellert, Preston; Claire Brasch, St. Ansgar, Iowa; Bob Rogers, Fredericksburg, Iowa. Second row, left to right: Howard Heaven, Arco; George J. Jirik, Webster; Francis Pumper, Webster; James E. Jenson, Revere; Dick Kaegbein, Rock Creek; Dennis Ide, Lester Prairie; Donald Landstrom, Watertown; Walter Britt, Lewiston. Third row, left to right: Mansel Jurgensen, Round Lake; Bill Gunsolus, Pemberton; Wallace Sorenson, Kiester; Dick Schlup, Hudson, S.D.; John DeKraai, Brookings, S.D.; Frank Plunkett, Blooming Prairie; Herman Schutter, Spencer, Iowa; Stan Holty, Houston; Allan Williams, La Crosse, Wis.

PANEL ON FEEDING—A panel discussion on trends in feeding was one of the highlights of the two-day program of the Mississippi Poultry Improvement Assn. meeting held recently in Biloxi. Members of the panel were, left to right, seated, W. L. Lavery, William Davis Co., Inc., Danville, Ill., and the panel moderator, H. F. McCarty, Magee, Miss. Standing are Dr. J. L. Milligan, Ralston Purina Co., St. Louis; Bill Garth, Garth Milling Co., Pelahatchie, Miss., and E. O. Creel, Alabama Flour Mills, Decatur, Ala. The panelists discussed the merits of several systems of milling and handling, stressing the use of concentrates and superconcentrates. They suggested that election of a system should not be made until the feed man has made a careful study of local conditions and situations.

GRADUATES—Service school graduates studied livestock and poultry nutrition and management in Minneapolis recently at a course sponsored by Peavey Feed Mills for its dealers and No. 2 men. The course was one of a series conducted by the company. Attending were (left to right): Herbert Zarns, Peavey Elevators, Pipestone, Minn.; Emery Vandenhouten, H. J. LeRoy Co., Brussels, Wis.; Harry J. LeRoy, Brussels; Homer Munson, farm service director, Peavey Feed Mills; J. R. Lindell, sales manager; Arthur Aas, F&F Supply, Fergus Falls, Minn.; Dave Williams, Peavey Elevators, Minneapolis office; Pete Jarvels, Peavey Elevators, Green Valley, Minn.. and Ronald Overton, Witzel Feed Service, Kasson, Minn.

EMERGENCY OATS STORAGE—Men wearing burlap-wrapped shoes place wooden strips and sand bags atop a grain bin owned by Cargill, Inc., at Omaha to weigh down a polyethylene cover and prevent wind whipping. (Wrapped shoes prevent puncturing the plastic tarpaulin.) With all elevator space filled with wheat, Cargill constructed this emergency plastic bag of Visqueen 6-mil film to store nearly 600,000 bu. of oats. The operation has been successful in providing services for oats producers in the area at a time when farmers needed an outlet during harvest, company officials said. The film is manufactured by the plastics division of the Visking Co., division of Union Carbide Corp., Terre Haute, Ind.

NEW cost-saving development

GIANT 5-lb. PACKAGE

5 LBS. NET
BIO-PABST
three thirty three
DUAL PURPOSE
ANTIBIOTIC SUPPLEMENT
WITH VITAMIN B1
FOR USE SOLELY AS A SUPPLEMENT IN ANIMAL FEEDS AND ANIMAL DRINKING WATER.
Bio-Pabst three thirty three contains soluble unrefined bacitracin powder, oral veterinary. Each pound represents not less than 33.3 grams of bacitracin activity (Master Standard), and not less than 1 gram of thiamine mononitrate (Vitamin B1).
PRODUCT OF THE PABST BREWING COMPANY
PABST Blue Ribbon
SINCE 1844
PABST BREWING COMPANY
T. M. REG., U. S. PAT. OFF., MILWAUKEE, WISC., PEORIA HEIGHTS, ILL.

WITH VITAMIN B_1 ADDED

A New Nationally Advertised Profit Item For You...

Appeals to every raiser of

chicks poults and swine

Bio-Pabst Three Thirty Three is dual purpose; use in animal feed or animal drinking water. It is stable, selective and effective.

BIO-PABST THREE THIRTY THREE is effective in:

1. Control and prevention of many swine and poultry diseases
2. Acceleration of growth
3. Increasing egg production
4. Stimulation of water and feed intake
5. Prevention of "stress conditions"

Vitamin B_1 assists in eliminating "stress conditions". It aids in the stimulation of appetite, promotes digestion and contributes to the prevention of nervous disorders. It is essential for the promotion of general well being and health.

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Animal Feed Dept.
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TWX-MI 586
Phone—Broadway 1-0230

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Records Tell the Story

By Al P. Nelson

About an inch of snow had fallen on that fall afternoon when an automobile turned in near Joe Brooks' office. A tall, grey hatted man in brown storm coat got out of the car, bent his head against the wind and went into the big sales room.

"Hi, Phil," greeted Joe Brooks warmly, recognizing Phil Reddick, a dealer from a small town in the next county. Joe had met Phil at several feed trade conventions and they had had many a pleasant chat.

"Joe," said Phil, stomping the snow from his feet, "you told me at the last convention that if I got over here some day you'd show me your scrapbook on sales promotions. Got time to do it now?"

"Sure, come into the office."

Joe led the way into his roomy office, introduced Phil Reddick to Rusty Hagen, the runty bookkeeper, and motioned the dealer to a chair.

Reddick opened his storm coat, lighted a cigarette and crossed one leg over the other. By this time Joe had taken out a big scrapbook and opened it on the desk near Reddick. He turned the pages, showing Reddick how he saved newspaper ads, direct mail letters, tickets, etc.

Book Is a Time Saver

"This book has been invaluable to me many times," Joe said. "It saves me thumbing through a stack of ads and letters each time I want to look up something about publicity, advertising or sales promotion. It's all pasted in here, along with the dates when I used the material."

Phil Reddick looked at the pages carefully. "That's an improvement on my ad filing system. I keep my published ads in a yellow manila folder, one for each month. But the ads slip around and I always have to unfold them and fold them again when I sort them out of the folder. Then, too, I haven't kept a file of letters I send out, or the tickets for promotions. I oughta do that."

"Every dealer should," Joe said. "Believe me, the right kind of filing system saves time and promotes efficiency, Phil. A dealer's time is worth lots of money these days. I figure if I waste a half hour looking for an ad or letter I used months ago, I'm adding heavily to my cost of doing business. So I have this ad book, and it's big enough so that it never gets lost."

Reddick chuckled. "I've got to revamp my ad filing system. I can see that. But, Joe, do you know if any of your sales promotion ads pay in actual sales? Got anything on that?"

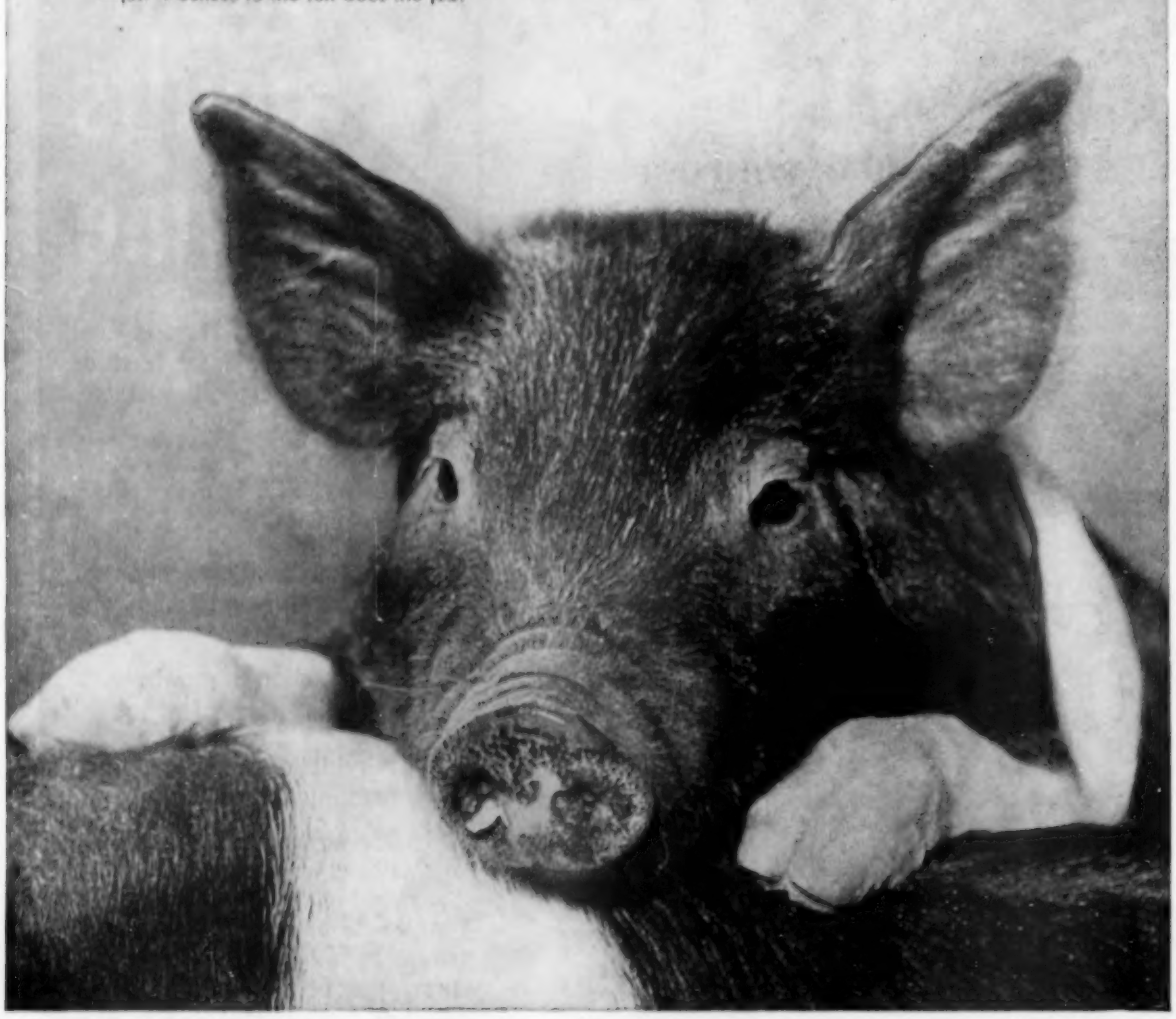
A Record on Sales

Joe Brooks nodded. He reached for a card index file on one corner of his desk, thumbed through it, and took out a white card. "I keep as much of a record as I can on each sale we put on, Phil. For example, I have a January clearance sale on some items each year. Most merchants do. The public, and the farmer is included, expects January clearance sales to have bargains, so why not cash in on this buying desire?"

Joe went on. "This card on my 1957 January clearance sale shows that I spent $72 more on advertising and promotion than the previous year for a similar January period, but we were able to do 6% more business. And we did a mighty good volume the

"I'm going to market and you can bet I'll bring a top price and make good eating—thanks to Dalpac BHT."*

Now that fats are being used in swine rations and other livestock feeds, feed manufacturers are turning to Dalpac antioxidant to protect the vitamin content without over-fortification. Dalpac also prevents rancidity of feed despite long periods of storage and transportation. Dalpac helps to guard the accuracy of the manufacturer's label. Dalpac is finely ground to permit easy processing and good dispersion. A little Dalpac goes a long way —just 4 ounces to the ton does the job.



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DOUBLE YOUR TONNAGE and TRIPLE YOUR PROFITS!

HONEGGER LEGHORNS
A natural profit-maker with plenty of follow-up poultry feed sales. An exclusive with HONEGGER DEALERS.

BIG "H" FEEDS
Are tested and proved at Honeggers' 600 Acre Practical Test Farm. The superior results of Big "H" Feeds mean repeat orders and repeat profits.

FARM BUILDINGS
Honeggers' complete line of competitively priced, pre-built farm buildings are an extra "exclusive" profit plus for Honegger Dealers.

EQUIPMENT
Honegger Dealers can have equipment shipped prepaid with their cars of feed. Honeggers' full line of modern labor-saving equipment makes an excellent "door opener" for extra feed sales.

For Full Details Write or Phone Collect TODAY!

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year before during the same period."

"But how can you say the increase came from the sale?" asked Reddick. "The increase might have come just from a seasonal rise in business."

"Our January clearance sale ran for 10 days," Joe replied. "This record card shows me that we did more business on those 10 days than we did any other 10 days of the month. To me that means that our ads and promotions paid off. We had a carnival atmosphere in the store, with banners, extra spotlighting, barrel displays of cat and dog items, etc. And we gave doughnuts with each cup of coffee from 9 a.m. until 10:30 a.m. every day. Farmers like to be sociable and visit. My store traffic was high those 10 days of the sale."

"And you keep records like that of each sale, Joe?"

Joe Brooks nodded. "I'm afraid not to," he admitted. "I've got to know if a certain sale pulls well each year and how much. Otherwise, I might have a sale with lots of traffic and no increase in volume. Sales are what count. If I get plenty of traffic for a sale but no increase in business, I know display or store selling was probably at fault. So I work on that."

Phil Reddick whistled. "Joe, the average feed dealer doesn't keep records like that. He doesn't seem to have the time."

"I didn't think I had the time, either, Phil, until I began checking on some of the results of my sales. I used to think it was more important for me to be out helping the men handle customers and load feed than being in here in the office. But I was wrong. A business is only as good as its management. And a manager must manage. He's got to know what he's doing every minute of the business day, and if he is making a profit on what he's doing. If he doesn't know that, then he's not as efficient as he could be."

Business Grows

"I think you're right, Joe. Now, I can see why your business is growing. You've got one big feed mill, a branch at Endeavor and now you've got a mobile feed unit, too. This record keeping discussion is helping me a great deal. I'm going to revamp my system."

"And I've learned a lot from you," Joe said warmly. "I tried your system of going out myself with the weighing device once a week and I've picked up a lot of business, just as you said. When you weigh farm animals, the feed gains are apparent to the farmer. And the dealer should do it himself, for that's when he can talk to the farmer and often get him secured as a regular customer."

Phil Reddick rose to go. "Joe, you and I have talked over feed retailing problems a lot in the years we've been in business. If I share an idea with you and you give me one then each of us has two ideas instead of one. You and I gain every time."

Joe nodded. "I wish more feed dealers would see it that way. We are really not in competition with each other. We really should be working together in groups to do a better job telling and showing the farmer what a better production and profit job a fully balanced feed program can do for him. If we could stick to a long range promotional plan like that, there would be more volume for all efficient feed men."

National Alfalfa Plant Damaged

DEERFIELD, KANSAS — Fire of undetermined origin recently at the plant of the National Alfalfa Dehydrating & Milling Co. here caused heavy damage. Company representatives hope to have the plant back in operation during the winter.

A portion of the roof and a section of the wall of the brick building which housed the plant caved in on a pelleting section. Bins and equipment near the pellet plant were not damaged.

Elevator Damaged

ENID, OKLA. — Damage totaling $100,000 occurred at Johnston's Elevator, Enid, when an explosion wrecked the headhouse. The blast was presumably caused by accumulated dust. No one was injured. The explosion touched off fires which added to the loss at the elevator.

...all you need...

All the help you need for a complete feed manufacturing and selling program . . . that's what the Ultra-Life Program provides you! Tested and proven vitamin and trace mineral fortification products that fully reflect latest nutritional developments; specialized formula service; laboratory and biological testing facilities; tag registrations and printing; advertising aids; your own firm name 16 page poultry and livestock journal, and many other sales and merchandising helps.

Write today for full details . . . see for yourself how the Ultra-Life Program works for you to help you maintain a strong competitive position.

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One of the Country's Oldest and Largest Manufacturers of Vitamin and Trace-Mineral Products

EVEN SMALL CUSTOM MILLERS CAN BOOST PRODUCTION *with* FORDS AUTOMATION

Let a FORDS representative show you actual mill layouts where AUTOMATION is working wonders

If you are not satisfied with your present plant, or thinking about replacing some equipment, or reorganizing your plant layout, call in a Fords Representative. If you are interested in making your plant more automatic he'll be glad to make recommendations without charge, including whatever drawings may be advisable. In this way you may save hundreds of dollars in planning service. Myers-Sherman Engineers, working with Fords equipment, have had lots of experience . . . know how to give you the most economical layout that will do the job. *Just write, wire or phone.*

Let a FORDS representative show you Actual Mill Layouts of FORDS AUTOMATION ENGINEERING and how he can save you hundreds of dollars on your installation.

Find out what can be done to your mill to make it more automatic. Myers-Sherman Engineers have had lots of experience. Know many short cuts. Are trained to give you the most economical layout that will do the job.

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Streator, Illinois

Automation Engineering Dept. 2501
Myers-Sherman Co., Streator, Illinois

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- ☐ Remote Feed Control Mills
- ☐ Vertical Mixers
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- ☐ Have your field man get in touch with us about your Automation.

Name ..... Title .....

Firm Name .....

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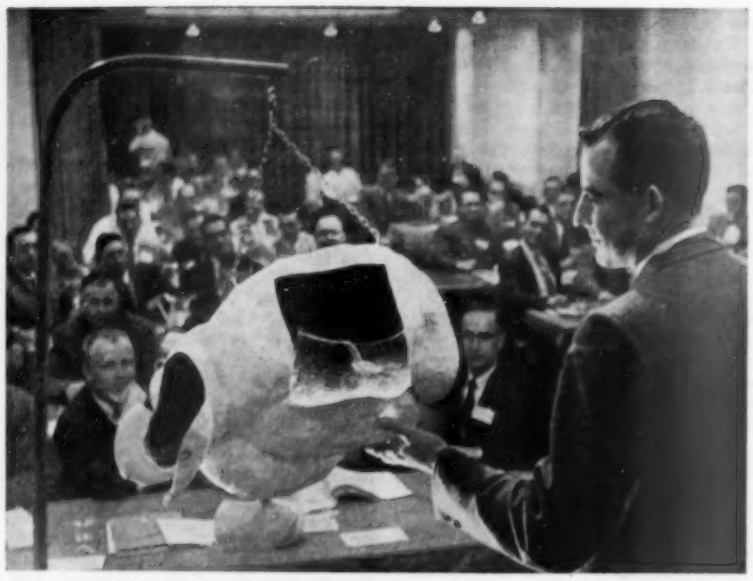

THE INSIDE STORY—The digestive process in beef cattle is demonstrated at a Nutrena Mills cattle feed school held in Minneapolis recently. Ralph V. Grier is giving the lecture. The intensive two-day session was held for some 70 Nutrena dealers and livestock industry representatives from Minnesota, Wisconsin and Iowa. Mr. Grier is illustrating his discussion with a large model of the cow's stomach.

Tennessee Feed Men Get Tour Invitation

MEMPHIS, TENN.—Feed men attending the Nov. 17-18 convention of the Tennessee Feed Manufacturers Assn. here are being invited to attend an open house and take a tour of the new facilities of National Alfalfa Dehydrating & Milling Co., located on President's Island.

A bus will take feed men from the Peabody Hotel at 2 p.m. Nov. 17 for a tour of the installation that stores under inert gas and processes dehydrated alfalfa pallets that are shipped in from National's dehydrating plants.

ADDS NEW OFFICE

LYND, MINN. — Burge-DeWall Co., Lynd, has announced the completion of a new office and feeder shed at its elevator. A corn dryer has also been installed.

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UP OR DOWN?

By Leonard W. Schruben
Agricultural Economist, Kansas State College

Soybean Situation

Another record soybean crop is in prospect, and the outlook is of unusually important interest to feed manufacturers and dealers. Much interest is always shown in the developing crop, and this year certainly hasn't proved an exception.

Because of the importance of this year's crop, you will be interested in how its size compares with amounts produced in earlier years. A crop of 487 million bushels was in sight on Oct. 1 This would be another record; as were 1956, 1955 and 1954.

EXHIBIT 1. Soybeans: U.S. farm price index of seasonal variation, 1925-52.

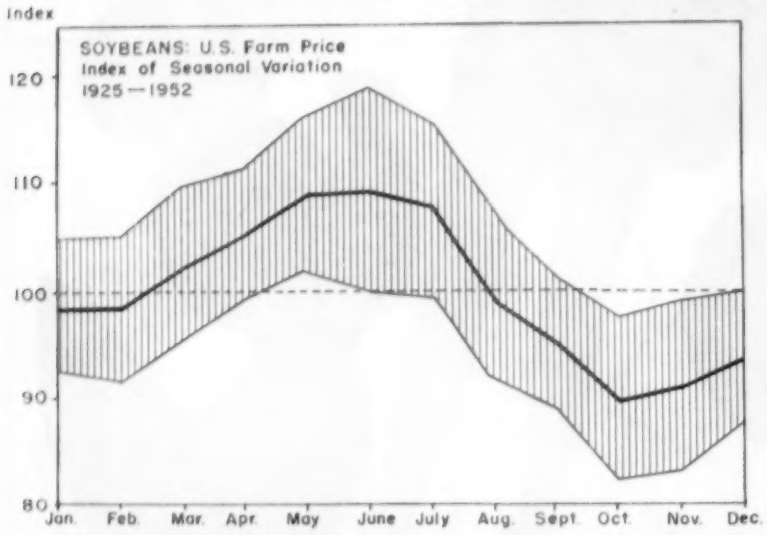
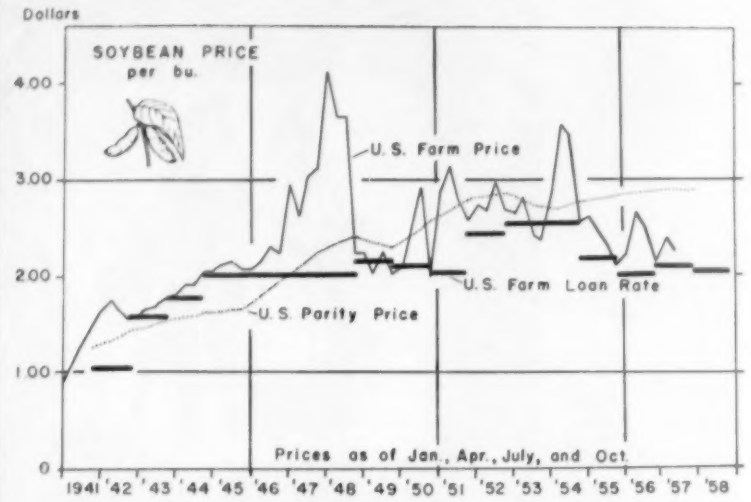


EXHIBIT 2. The relation among farm, parity and support prices, U.S., 1941 to date.



General Price Situation

Anyone familiar with soybean price behavior should know that it is risky to forecast price patterns for the following winter and spring. As an acquaintance once remarked, "It's hard enough to tell what soybean prices have been without trying to forecast." However, decisions on what to do with this year's harvest are being made, and it will do no good to bury our head in the sand—we might as well take a look at the prospects.

If a normal season develops, it seems reasonable to expect soybean prices to decline during the harvest season as has happened more often than not. As you can see by examining Exhibit 1, the general pattern is for soybeans to reach their seasonal low in October and November. An index is used in order to make comparisons among the months easier. Although the computation does not include the past few years, the pattern has remained the same. The shaded band around the index line gives a range of the expected pattern. About two out of three years have fallen within this range in past years.

High prices generally occur during May, June and July. As you can see from the width of the shaded band, prices do not always go up during this period. In the past 29 years, soybean prices have advanced 9 out of 10 times from fall until the following spring.

The support program is important in stabilizing prices. As is shown in Exhibit 2, farm prices have never fallen below the price support rate for any extended period. You will notice the line representing farm prices has been above the loan sometime during almost every year.

It is expected there will be a sufficient amount of high protein feeds to supply needs for feeding on a level with last year's rate. At the present time there isn't much reason to believe that the tendency for soybean prices to bottom out at harvest time will be changed this year. Of course, soybean prices are sensitive to prospects for war or peace as well as to record size. Barring a war, prices can be expected to hover near the support rate during the winter with some improvement during the summer months.

If war breaks out, all bets are off and you may as well chuck this forecast in the wastebasket.

OFFICE BUILDING DAMAGED

PALMER, ILL.—The office of the Palmer Grain Co. was damaged recently from fire caused by a lightning bolt. Fire damage was slight, but electrical equipment was damaged considerably.

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Clean Grain Practices Vary, Survey in Washington Shows

By Merrill D. Sather
Pacific Northwest Grain Dealers Assn.
and
David W. Walker
Washington State College

Controlling insects in stored grain in Washington cost some storage operators practically nothing while others had costs as high as 2¼¢ per bushel, according to information compiled in a survey conducted by the Pacific Northwest Grain Dealers Assn. in cooperation with the Washington State College department of entomology.

In general, control costs per bushel decreased with increased storage capacity. Twenty-seven firms with combined capacity equal to 20% of the state's country grain storage, and representing a geographical cross-section of Eastern Washington's public grain storage facilities answered questionnaires on the crop years, 1953-54, 1954-55, and 1955-56.

The survey objective was to provide the state's clean grain researchers with information on methods used and costs involved in preventing insect infestations in stored grain. Specifically it was designed to find out what economic losses occur and where research and extension emphasis should be placed; also to determine, if possible, if preventive measures were more economical than control measures.

Survey respondents included firms storing 76,000 bu. annually and ranged upward to firms handling as much as 7,700,000 bu. per year. Control costs ranged from nil to 2¼¢ bu., with the higher costs in the smaller plants. This wide range in costs is partly due to the common practice of turning grain to break up localized insect infestations and to cool, condition, or blend grain.

Depending on capacity, amount in storage, and a number of other conditions, many elevator operators will turn grain rather than fumigate. In many cases it results in cost savings and also avoids health hazards coincident with fumigation.

Estimates Vary

Opinions and estimates on costs of turning grain vary widely. Many elevator operators consider electricity and labor as normal overhead and do not charge them against the cost of insect control. They reason that power costs would not exceed minimum monthly charges and that labor would be a normal maintenance cost anyway.

An earlier study in 1955 by Dr. H. S. Telford and David W. Walker, both of Washington State College, department of entomology, revealed that a single turning would cost as much as 0.6¢ bu. for labor and operational costs.

The grain dealers' survey revealed that insect control measures thought to be most satisfactory in order of use were: fumigating, turning, simultaneous turning and fumigating, and residual bin sprays. Most operators thought a combination of turning and fumigating more satisfactory for controlling stored-grain insects, while others preferred the cold weather turning procedure.

An additional query was made relative to sources of contamination, and insects were found most troublesome in 23 of the 27 cases. Birds and rodents were the worst source of contamination in 3 and 2 cases, respectively.

Total costs of insect control will vary among operators depending on grain moisture, length of storage

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time, and type of storage structure, to name a few. Grain moisture and length of storage period seem to be the more important considerations. Flat storage is conducive to greater insect problems than upright or tank-type storage. This is probably due to the larger grain surface. Infestations tend to develop in "hot spots" near the surface of the grain, and with time will spread throughout the grain mass. This phenomenon would therefore understandably present a greater threat to grain in flat storage as a direct result of the increased surface area.

A Growing Problem

Insect control has not been an important consideration in construction or maintenance in past years, even though the hazard of insect damage in grain storage was recognized in the early 1940's. However, with the advent of newer governmental restrictions and reduced contamination tolerances, these problems have presented greater responsibilities to storage operators.

Control costs in the Pacific Northwest are low by comparison with recommended procedures in other grain producing areas of the U.S.

A dry maturity and harvest season coupled with prolonged periods of cool, relatively dry storage periods for the most part account for the favorably low costs.

Infestations by internal feeders have been uncommon in the area, but have been seen more frequently in the past year. The granary weevil and rice weevil are seldom seen and the lesser grain borer has been reported only once in the State of Washington. Likewise, the Mediterranean flour moth and the Angomois grain moth are not common.

Bran bugs comprise the greater proportion of commercial storage infestation. The red flour beetle, saw-toothed grain beetle and flat grain beetle are seen most often.

Although these insects do little damage directly, they pose a considerable secondary threat to the keeping qualities of grain.

How They Threaten

First, their presence in grain is sufficient to cause downgrading under present standards. Secondly, and perhaps most important, is the contribution insects make toward favorable environment for mold growth. Metabolic water from insect activity plus moisture migration from the grain mass often combine to create a favorable condition for sprouting. Caking and musty odors may precede sprouting. Any of the three factors could contribute to downgrading and/or increased handling costs.

The size of storage facility is an important factor in costs of insect control. Most commercial elevators in Washington are between 100,000 and 300,000 bu. capacity, with many still larger. Management is often able to employ a full-time man to continuously observe grain condition and perform other maintenance tasks in a large plant. Thus the grain can be watched more closely and minor infestations can be eradicated before they reach advanced proportions.

Finally, maintenance standards and inspection procedures vary considerably among grain handlers. Some operators do not regularly inspect their grain from the time of harvest until it is sold. This group relies on boxcar fumigation as the sole means of insect control, and often are successful. However a single unsuccessful season could provide the necessary incentive for a change in procedure.

Most commercial storage operators have instituted a system of regular inspection for insect presence and damage. Although inspection frequencies vary, most have settled on a monthly schedule followed by more frequent checks if trouble is incurred. This method pays off in decreased control costs.

GRAIN MAN DIES

NORMAL, ILL.—Herbert J. Moore, grain dealer for more than 40 years, died recently of a heart attack. He was president of Herbert J. Moore & Co., grain broker and merchandiser. More recently he was associated with the Hannie Grain Co. as a consultant while he worked for himself in the sale of grain elevators.

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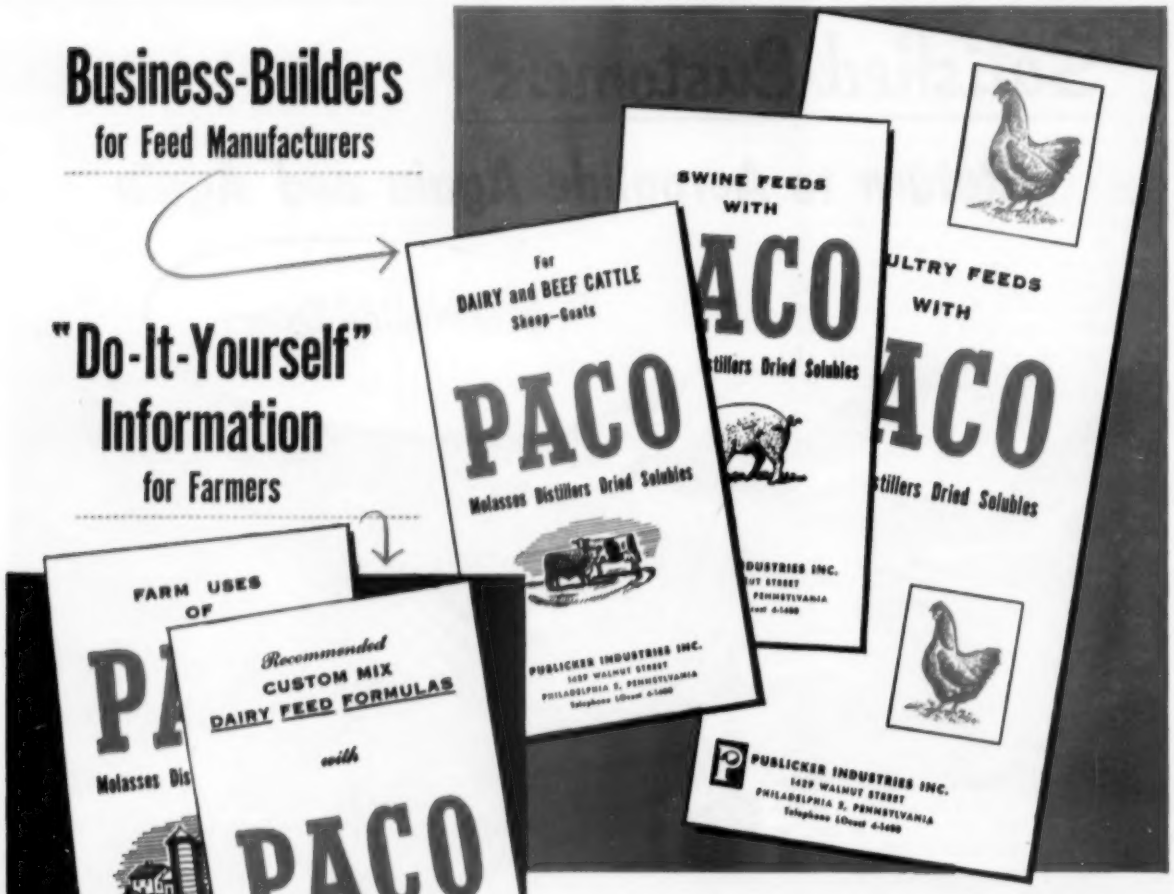

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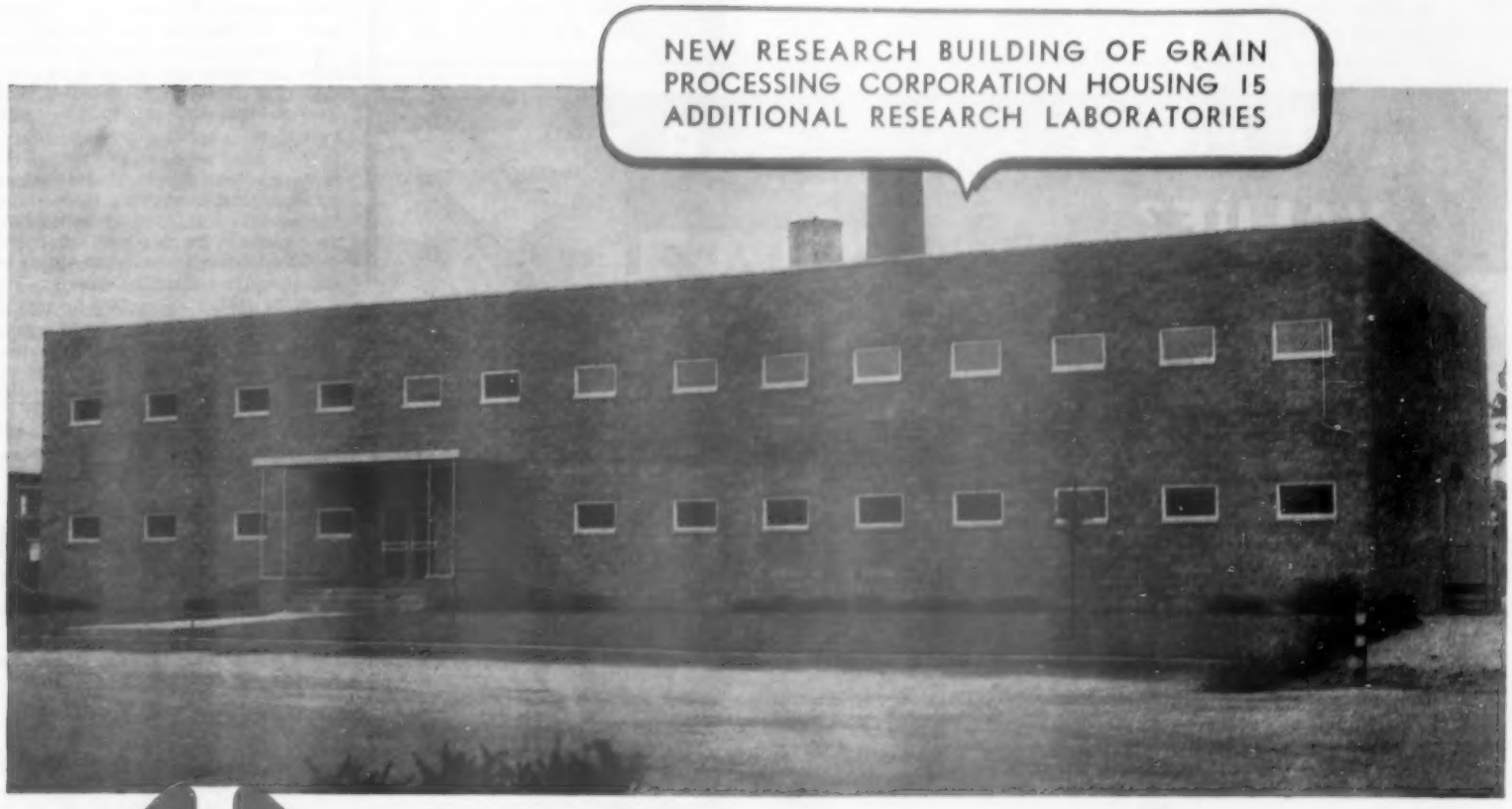

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The Economics of Warehousing In the Feed Industry

By Eric A. Carlson
Ralston Purina Co.

FOREWORD:

An almost constant question asked in the feed industry is: "How much warehouse and bulk storage is needed to handle the ever-increasing variety of both ingredients and finished products?"

The feed industry has taken a long time in recognizing that the factors of variety of ingredient and variety of product call for an entire reappraisal of not only area and volume of storage space, but an entirely new concept of production operations and control as well.

Most feed mills have followed the practices and procedures of the single ingredient and single product flour mill as originally industrialized by Oliver Evans just after the period of the American Revolution at the end of the 18th century.

Oliver Evans designed and set up procedures for the operation of a flour mill wherein the raw wheat was automatically unloaded from the hold of a ship, processed into flour, with the flour packed into barrels, and these were then loaded directly back onto the ship from which the wheat was being unloaded. The Evans mill is now being credited as the perfect solution to material handling, the start of the continuous process, as well as the start of the American industrial revolution and the start of that new phraseology, "automation."

The milling industry, both as to flour and feed, has tenanciously held onto the Evans principles of "unloading direct to process" and "loading direct from process." It is impossible to disagree with the Evans principles and procedures in a "single ingredient and single product process," but untold production hours and resultant production have been lost by trying to hold too closely to these principles and practices as variety of both ingredient and finished product has rapidly moved into the milling (and especially the feed milling) industry.

Eric A. Carlson

However, provision of unlimited storage space alone will not solve the problem of lost operating time and resultant lost production. Such unlimited space will tend only to increase capital invested in inventories unless some adequate system of inventory and production control is adopted before the space is provided. An adequate system of inventory and production control should not only control stocks of raw and finished materials, but must control storage space as well. A minimum capital investment in inventories and storage space will be required to provide the desired maximum service and maximum economical production when adequate inventory and production controls are set up and maintained.

Before arriving at a formula or method of determining warehouse and storage requirements, it is well first to understand completely the economic relationship of unit costs to the profit factors of margin and rate of turnover.

THE ECONOMICS OF UNIT COSTS:

Principle: Lowered unit costs increase both the margin of profit and the rate of turnover by operating capital. Gross profit is the product of the margin of profit multiplied by the rate of turnover and multiplied by the total operating capital.

Operating capital is required to:

1. Obtain and store raw material.
2. Process raw material into finished product.
3. Warehouse and distribute finished product (including sales and promotion).

The unit costs in all above divisions are important, and the principle of profits previously listed applies to all three divisions.

What is the unit of measurement that is used to determine the unit costs in the feed industry? This unit is or should be tons of feed manufactured.

Note that this unit of measure is not tons of raw material nor tons of feed sold. This unit of measure, **tons of feed manufactured,** should be used to measure unit costs of divisions of operating capital 1 and 3 above as well as division 2.

In reviewing the Oliver Evans mill, it will be readily seen that he had little or no unit costs in storing either raw material or finished product. His only unit costs in regard to raws and finish were the cost of handling one into the mill and the other one out of the mill. No inventory costs were involved.

In studying the foregoing, you will find that the following theorems or principles apply:

1. The unit cost of obtaining and storing raw materials increases as the ratio of tons of raw materials stored to tons of feed manufactured increases. As this unit cost increases, the margin of profit and rate of turnover decrease, with a resultant decrease of the gross profit.

2. The unit cost of warehousing and distributing finished feeds increases as the ratio of tons of finished feeds warehoused to tons of feed manufactured increases. As this unit cost increases, the margin of profit and rate of turnover decrease, with a resultant decrease in the gross profit.

Operating capital invested in raw material (and storing) and finished product (and storing) is the same as operating capital tied up in accounts receivable. (An interest charge is usually assessed against accounts receivable after ten (10) days.)

From all of the above it will be readily seen that it is most important to profits that the flow of raw materials into the plant and through the

EDITOR'S NOTE: Some basic information and suggestions on the determination of storage and warehouse requirements in feed plants are provided in the accompanying article by Eric A. Carlson, manager of Standards division in the production department of the Ralston Purina Co. Mr. Carlson presents some background information and explains the economics of unit costs, and then he explains just how storage and warehouse requirements can be determined for both raw materials and finished feeds. He also offers some rule-of-thumb guides. Mr. Carlson has been manager of standards for Purina for more than seven years; he is responsible for the standards program for cost control, wage incentives, methods improvement, material handling, etc., in 48 feed and cereal plants. Before joining Purina 13 years ago, he was in time and methods study work and division standards manager for the Corn Products Refining Co. He received his technical training at the University of Michigan, University of Illinois and Michigan State University. Mr. Carlson has been in the materials handling field for 22 years. He has taught courses at Washington University in St. Louis and also is active in materials handling and other technical societies. He has presented numerous talks and papers on materials handling, cost control and other subjects, and has received national awards for papers on materials handling.

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process be scheduled and controlled. This is inventory and production control.

It will also be readily seen that it is necessary to profitable operations to schedule and control finished products through the process, as well as into and through the warehouse. This is production and inventory control.

DETERMINATION OF STORAGE AND WAREHOUSE REQUIREMENTS:

Raw Materials: If the storage of raw materials were a matter of volume only, the determination of storage requirements would be a simple matter.

With the variety of ingredients constantly increasing, such determination becomes increasingly complex.

There are, however, certain basic rules that should be followed under any and all conditions. These are as follows:

1. The storage and warehouse requirements for each ingredient should be determined separately.

2. Total storage and warehouse requirements should be arrived at by adding the requirements of each separate ingredient.

The question that follows is: "How do you determine the storage and warehouse requirements for each separate ingredient?"

This is determined by:

1. Determining daily seasonal usage of the ingredient (re-capping monthly reports for a year or more, or by maintaining a case history card (Kardex) on each ingredient).

2. Determining economical amounts of purchase with consideration for volume discounts. (Note: Cash discounts for volume should be balanced against increased unit costs and resultant reduction in margin and reduced rate of turnover in regards to operating capital tied up.)

3. Determining whether ingredient is in full year supply or available only on a seasonal basis. (Note: Any price advantages by buying in season should be balanced against increased unit costs and resultant reduction in margin and reduced rate of turnover in regards operating capital tied up.)

4. Determining maximum, minimum and average variance from scheduled shipping and receiving dates on ingredient being analyzed. Consultation with supplier often eliminates any variance on the above.

5. By weighing the results of the above four steps, determine the minimum storage requirements for the ingredient that will insure full economical plant operation. (No loss of operating time through being out of ingredient.) Apply a 50% safety factor to the above to determine maximum storage requirements. This should be the storage and warehouse requirement for the ingredient.

CONCLUSION: Though the correct amount of storage and warehouse space is an important factor for economical production and maximum service, inventory and production scheduling and control are the primary factors in attaining these objectives.

Finished Product: Here again, if the determination of warehouse space were a matter of volume only, the determination of such requirements would be a simple matter.

During the last few years the variety of finished products has increased at a rapid rate, making the problem much more complex.

The same basic rules of analysis apply to finished product that apply to raw materials, namely:

1. The storage and warehouse requirements for each product should be determined separately.

2. Total storage and warehouse requirements should be arrived at by adding the requirements of each separate product.

Here again the question is: "How do you determine the storage and warehouse requirement for each separate product?"

This is determined by:

1. Determining minimum, maximum and average daily shipments for various seasons (re-capping monthly reports and reviewing daily long sheets (shipping recaps)). This should be done for each individual product.

2. Determine minimum economical production run for each individual product. (Note: For mash meal this would be a single batch in a batch plant, and a minimum of a 15-minute run in a feederline plant.)

On pellet or crumble products the minimum production run should be equivalent to the full production that can be run in the unit in a half hour's time. To overcome losses in production due to excessive change-over time, some mills have engineered each pellet machine as a separate unit. Thus, more than one pellet or crumble product can be run simultaneously with a substantial reduction in change-overs per machine, this even with lowered minimum production run.

On dairy feeds longer minimum runs are required for economical operation. There are, however, some

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2 EXTRA BAGS *every minute!*

EXTRA SPEED — The new 1958 Thayer Feed Mill Scale fills two extra 100 lb. bags every minute (for a total of 15 or more per min.) This extra production is attained with an average accuracy of between 1 to 2 ounces. This speed can be maintained indefinitely without forcing the operation, giving you an extra profit every day.

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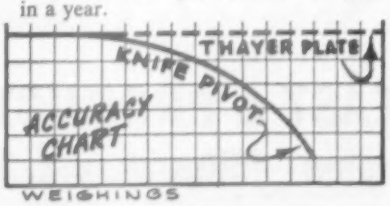
EXTRA ACCURACY — The patented Thayer Plate Leverage System is *guaranteed accurate for the life of the scale.* There are no knife-edge pivots to wear-down or foul-up. Accuracy is not affected by dust, dirt, shocks or vibration. The money you may now be wasting in overfilling bags "just an extra ounce for safety" could pay for a new Thayer in a year.



May we send you a folder that clearly pictures how Thayer Scales are constructed. You will see why mills like Pillsbury, OK, Payway, Eastern, General Mills, etc. use Thayer Scales to attain speed with unvarying accuracy.

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The Thayer System of Batching, Filling & Checking Automatically By Weight

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- ☐ Please send me your Feed Mill Scale Construction Folder.
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DISCUSS MANAGEMENT PROGRAM—Aiming at a uniform story on poultry management in Nebraska, feed industry representatives have been working closely with University of Nebraska poultry specialists. Brochures, news releases and radio programs have been going out to poultry producers in all sections of the state, all telling the same story on good management practices. Feed companies, county agents and college specialists cooperated in preparing the program. Discussing the management recommendations above are Dr. John A. Adams, new head of the poultry department at the University of Nebraska; Harold Fouts, G. E. Conkey Co., Nebraska City, feed committee representative, and John Skinner, new poultry extension man, University of Nebraska.

engineering practices that can be adhered to, to lower the minimum economical run of such products. First, standardized packing equipment can be installed (usually automatic scales) that will require the same amount of manpower to sack off the various dairy products, at a standardized production rate. Secondly, a supplementary feederline arrangement can be installed whereby solubles and flake products can be added to and mixed with a previously mixed blend of the remaining ingredients of the feeds. Such a supplementary feederline arrangement would be operated by the molasses unit lead man.

With the above arrangement, minimum economical runs can be lowered and the transfer of manpower in and out of group eliminated.

3. If total monthly shipments of any one product are less than the determined minimum economical production run, such a product can be dropped from the price list—or treated as a special product requiring a minimum of 48 hours advance notice and also requiring the customer to order the full amount of the minimum economical run.

In multiple plant operations, an alternative would be to have such a product shipped from another plant where the demand of a number of plants could be consolidated into a minimum economical run.

4. By weighing the results of the above three steps, determine the minimum storage requirements for each product.

Apply a 50% safety factor to the above to determine maximum storage requirements for the item. This should be the storage and warehouse requirement for the item.

CONCLUSION: Though the correct amount of storage and warehouse space is an important factor for economical production and maximum service, production and inventory scheduling and control are the primary factors in attaining these objectives. A great deal can also be done in engineering processes to meet today's demand for a variety of production.

SUMMARY:

Complexity of modern feed mill operation, calls for an entirely new

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MINERAL SUPPLEMENT FOR FEED MIXTURES

Add Phos-Feed to your feeds for phosphorus content

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Guaranteed Minimum Phosphorus—23.7%
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WESTERN CONDENSING COMPANY
Appleton, Wisconsin
World's Largest Producer of Whey Products

approach along with detailed study of all operations.

The rapid introduction of the variety factor, both as to raw materials and finished product, calls for close control of all functions in production and warehousing. To obtain the necessary control, not only must a workable control system be inaugurated, but a high degree of cooperative effort must be maintained among buying, traffic, production, distribution and sales.

The following rule-of-thumb guides have been established from experiences of plant studies.

Raw Materials: With proper inventory controls and purchase controls, the minimum in-plant inventory of raw materials should be equal to three days' usage at the going plant production level. The maximum in-plant inventory need not exceed five days' usage.

Finished Product: With proper inventory controls and production scheduling, the minimum in-plant inventory of finished product should be equal to three days' total shipments, at the going production level. The maximum need not exceed five days' total shipments.

The above rule-of-thumb figures are based on an average of 100 different formulas and 150 products in 200 varied packages, as being typical finished product inventory.

On minimum storage allowances this would call for approximately 50 formula changes, with 25 changes on pellet unit and 100 changes in packer setups, per day.

On maximum storage allowances this would call for approximately 30-35 formula changes with 15-20 changes on pellet unit and 60-70 changes in packer setups per day.

If variety factor is high, the rule-of-thumb will not apply to lift truck operations, as more aisle exposure is required per lane for pallets than on two wheel truck operations. Thus, more aisle exposure is required for a given variety factor.

This would give an annual turnover rate of 30-45, regards operating capital, in inventories.

The modern techniques of "operations research" and "linear programming" provide scientific answers of higher accuracy to the problems of inventory and production control and scheduling, as well as to the problems of storage space determination for both raw and finished products.

Clarence Fitzgerald Joins Import Firm

NEW YORK—Clarence Fitzgerald, associated with the feed business in the South for more than 35 years, has joined the Atlanta, Ga., sales staff of H. J. Baker & Bro., H. V. B. Smith, senior partner in the importing and exporting firm, announces.

Mr. Smith said Mr. Fitzgerald will represent the company in all areas of its activity—heavy chemicals, fertilizer materials, pharmaceuticals, greases, oils, fats and meals as well as animal feeds.

Mr. Fitzgerald had been with the Atlantic Milling Co., Augusta, Ga., from 1923 to 1931 when he joined Puritan Mills in Atlanta. He was with Puritan for 18 years and before joining Baker, he had been with the brokerage firm of Theo. W. Martin & Son, Atlanta.

A LABORATORY OF YOUR OWN!

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Smith-Douglass Reports Higher Sales, Lower Net

NORFOLK, VA.—The Smith-Douglass Co., Inc., had net sales of $37,283,000 and a net income of $1,778,000 for the fiscal year ending July 31 compared with net sales of $37,201,000 and a net income of $1,901,000 for the prior year.

In the annual report to stockholders, it was stated that although profit margins were less favorable for the past year, steps were taken to improve techniques and efficiencies. In explaining to stockholders the acquisition in May of Texas City Chemicals, producer of dicalcium phosphate and related chemicals, the report stated that Texas City plants were relatively new and had been constructed at a cost of about $6 million. Other divisions of Smith-Douglass are the Coronet Phosphate Co., the Smith-Rowland Co., and the San Jacinto Chemical Co.

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The number of feed companies calling on Dawe's for fortification products is increasing daily. People who make the feed business their career enjoy dealing with a career company. Fortification is Dawe's career. For over thirty years, we have specialized in vitamins and other feed additives for the feed industry.

The chances are you, too, would find Dawe's a better source of your fortification requirements, whether they be for individual vitamins, premixes custom-blended and packaged to your specifications, or comprehensive multiple-vitamin fortifiers of Dawe's own formulation.

You'll like the fast, personalized service from Dawe's plants at Chicago and Peoria, Ill., Fort Worth, Tex., Auburn, Wash., and Newaygo, Mich. . . . or from fresh warehouse stocks at: Atlanta, Ga., Buffalo, N. Y., Columbus, O., Denver, Colo., Kansas City, Mo., Madison, Wis., Memphis, Tenn., Minneapolis, Minn., Roanoke, Va., Stockton, Calif.

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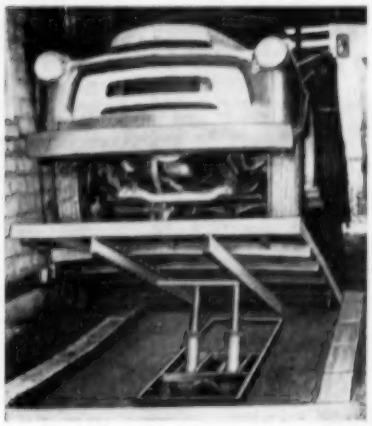
Worth Looking Into

New Products
New Services
New Literature

This reader service department announces the development of new and improved products, new services and new literature offered by manufacturers and suppliers. Claims made in this department are those of the firm concerned. Use the accompanying coupon to obtain the desired information.

No. 5867—Hydraulic Truck Hoist

Greater efficiency, safety and economy of space and operation are claimed for the new hydraulic truck hoist introduced by J. B. Sedberry, Inc. The hoist is constructed of heavy steel, with dual cylinders. The hydraulic pump, operated by a 1½ h.p. motor, raises the hoist to maximum



of 45°. Releasing the pump clutch lowers the hoist under its own power. Over-all dimensions of the hoist platform are 7 by 12 ft. It is designed for installation with a dump pit for a drag feeder, with 8½ ft. as the suggested distance between the end of the hoist and the pit. When not in use the hoist is flush with ground level and vehicles can move over it without damaging it. Secure full details by checking No. 5867 on the coupon and mailing it.

No. 5857—Processing Equipment Catalog

The Sturtevant Mill Co. has published an eight-page dry processing equipment catalog, in which air separators and their use in closed-circuit grinding, micronizer fluid energy mills grinding and rotary batch blenders are described in detail. Information on crushing and grinding machines, fertilizer machinery (mixers, granulators, screens, elevators and conveyors, etc.) and laboratory reduction mills is also given. Secure the catalog by checking No. 5857 on the coupon and mailing it to this publication.

No. 5863—Labor Law Film

"You and Labor Law," a two-part 30 min. sound slide film in color describing the history, purpose and principles underlying U.S. labor law, has been completed by Transfilm. Part 1 shows the evolution of labor law philosophy and precepts and Part 2 shows U.S. labor law in action. The film is designed to stimulate discussion, the producer states. The film is for sale through the Employers Labor Relations Information Committee, Inc., 33 East 48th St., New York 17, N.Y., and inquiries may be sent to that address.

No. 5888—Antibiotic Mastitis Treatment

"Mastigun" is the trade name of a mastitis treatment being supplied by Whitmoyer Laboratories, Inc. The product is described as "a synergistic combination of the antibiotics Penicillin, Dihydrostreptomycin, and Neomycin—plus sulfa drugs, cobalt and Papain. The combination of antibiotics and sulfa drugs provides synergistic inhibitory action against certain mastitis-causing organisms." According to the manufacturer, the product has been formulated so that the penicillin dosage complies with the new regulations. Cobalt has been added to increase the killing power of penicillin. Papain liquefies the clotted milk which permits the antibiotics to get to the source of the infection with the greatest speed, it is claimed. Secure details by checking No. 5888 on the coupon and mailing it to Feedstuffs.

No. 5891—Multiwall Foil Bags

Multi-wall aluminum foil bags for the bulk shipping of many industrial and chemical products are described in a brochure published by the Reynolds Metals Co. The brochure is titled "Multi-Wall Foil Bags." The bag has been proved satisfactory for the bulk shipment of hygroscopic or deliquescent materials, moist pastes, corrosive and efflorescent chemicals, oily products, gaseous compounds, alkaline products and caustics, company officials say. The aluminum foil can be laminated either inside, outside or between the two layers of paper in a two-ply kraft bag. Special combinations of materials are also available. Check No. 5891 on the coupon and mail it to this publication. please print name and address.

☐ No. 5866—Bulletin

No. 5874—Feed Analysis Table

The Nopco Chemical Co. has published a newly revised edition of its Feed Ingredient Analysis Table. The 1958 table presents the nutritive content of 71 common feed ingredients and is intended as a basis for quick computation of a mill's feed formulas. All figures shown in the table are reexamined annually in the light of the most recent analytical data, company officials state. Feed mixers may obtain a free copy by checking No. 5874 on the coupon and mailing it to Feedstuffs.

No. 5865—Chemicals Price List

Mann Fine Chemicals has prepared a wholesale price list for its line of chemicals. On the back page of the price list is a "new products section" which contains pharmaceuticals classed as "new drugs." The price list is available without charge. Check No. 5865 on the coupon and mail it to this publication.

No. 5873—Collapsible Container

The Industrial Molasses Corp. has available without charge details of its collapsible container, called by the

trade name, "Sealdtank." The unit is of one piece and is made of Neoprene rubber. It holds more than 3,000 gal. and can be hauled on semi-trailers, barges, rail cars and ships, company officials state. The units can be leased or purchased outright. Check No. 5873 on the coupon and mail it to secure details.

No. 5872—Feeding Program for Hens

Honeggers' & Co. has announced a new feeding program for laying hens which is centered around continuous feeding of low level antibiotic feeds during normal production and high level antibiotic feeding during times of stress. Honeggers' officials say that its "biggest advertising campaign" in history is being launched to back the program. A brochure describing this plan is available to feed retailers. Check No. 5872 on the coupon, print the necessary information and mail it to Feedstuffs.

Also Available

The following new products have been described in previous issues of Feedstuffs and information about them may still be obtained by jotting the appropriate number on the coupon and forwarding it to Feedstuffs.

No. 5799—Self-adhering numbers, letters and signs for marking bins and tanks, Westline Products division, Western Lithograph Co.

No. 5801—Combination portable mill and mixer, Iowa Portable Mill Co.

No. 5802—Granular calcium carbonate, Calcium Carbonate Co.

No. 5803—Shear pin drive for corn crusher, Woodbury Sheet Metal Co.

No. 5820—Edible, colored identification wafers for identifying bulk feed, Bulk Feed Identification Co.

No. 5821—Antibiotic supplement for use in feed and drinking water, Pabst Brewing Co.

No. 5822—Dust collector, Aget Manufacturing Co.

No. 5823—Speed reducers, J. B. Ehrsam & Sons Manufacturing Co.

No. 5824—Pamphlet on an evaluation of trace mineral compounds, Morton Salt. Co.

No. 5825—Laboratory mixer with a capacity of about 50 lb., Rapids Machinery Co.

No. 5826—Rat and mouse control, O. E. Linck Co., Inc.

No. 5827—Plastic dot application to the dragging surface of cotton pick sacks, Bemis Bro. Bag Co.

No. 5828—Chlordane squeeze duster, Hess & Clark, Inc.

No. 5804—Circular on the status of the use of animal fats in feeds, American Meat Institute Foundation.

No. 5805—Disease control in turkeys and poultry, Hess & Clark, Inc.

No. 5807—Catalog of poultry phar-

Send me information on the items marked:

☐ No. 5857—Catalog
☐ No. 5863—Law Film
☐ No. 5865—Price List
☐ No. 5867—Truck Hoist
☐ No. 5872—Feeding Program
☐ No. 5873—Container
☐ No. 5874—Feed Table
☐ No. 5888—Treatment
☐ No. 5891—Foil Bags

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No. 5808—Automatic cage fountain for poultry and small animals, Miller Manufacturing Co.

No. 5809—Anticoccidial substance and coccidiostatic growth stimulant combination, Dr. Salsbury's Laboratories.

No. 5810—Therapeutic formula for treatment of respiratory diseases in poultry, Abbott Laboratories.

No. 5811—Symposium booklet on mineral elements, International Minerals & Chemical Corp.

No. 5812 — Blackhead treatment, Merck & Co., Inc.

No. 5813—Three-step program for controlling internal parasites in animal herds, International Salt Co.

No. 5814—Automatic feed mixing plant which uses a punch card, Buhler Brothers.

No. 5815—Punched card system for batching operations, Richardson Scale Co.

No. 5816—Calculator for grain and feed company figure work and computing, Victor Adding Machine Co.

No. 5817—Portable electric sewing machine, Burrows Equipment Co.

No. 5818—Bag packer with jouncing action, Richardson Scale Co.

No. 5819—Plate magnet for tramp iron separation, Stearns Magnetic Products.

No. 5829—Corrugated bulk container for holding 1,000-1,500 lb. of a product, Gaylord Container Corp., Division of Crown Zellerbach Corp.

No. 5831—Grain bin ventilating ducts, Lennox Farm Division.

No. 5832—Machine for testing grinding behavior of grain and other granular products, MIAG Northamerica, Inc.

No. 5833—Electric vibrator for bins, chutes and hoppers, Cleveland Vibrator Co.

No. 5834—Grain roller mill, W-W Grinder Corp.

No. 5835—"All-purpose" roller mill, Peerless Equipment Co., Inc.

No. 5836—Bulk loader, 25-ton per hour capacity on grains, feeds, etc., Runco Corp.

No. 5837—Poultry house literature, Western Production Co.

No. 5838—Towing tractors, Frank G. Hough Co.

No. 5839—Bulletin on belt conveyor idlers, C. O. Bartlett & Snow Co.

No. 5840 — Overland controller, Ralph C. Gardner & Co.

No. 5844—Wet-dry vacuum cleaner line, Clarke Sanding Machine Co.

No. 5846—Phenothiazine in salt, Morton Salt Co.

No. 5842—Bulk material level control device, Bin-Dicator Co.

No. 5843—"Airstream" conveyors for bulk handling, Dracco Corp.

No. 5845—Expeller trouble shooting manual, V. D. Anderson Co.

No. 5847—Livestock and meat industry reference book, American Meat Institute.

No. 5849—Auger unit for attaching to a grain box for handling feed in bulk, Productive Acres Manufacturing Co.

No. 5850—30-in. diameter vibrating screen separators in 1-, 2- and 3-deck models, Southwestern Engineering Co.

No. 5851—Livestock and poultry disease treatment with sulfathiazole, U.S.P., solublized, Eastern Laboratories, Inc.

No. 5852—Tube squeezer for mastitis treatment, Chas. Pfizer & Co., Inc.

No. 5854—Feed mixing salt, International Salt Co.

No. 5855—Coarse ground corn sample, Fruen Milling Co.

No. 5856—Folder on rolled grain advantages, Roskamp Huller Manufacturing Co., Inc.

No. 5868—Distillers' feeds formulas, Distillers Feed Research Council.

No. 5869—Brochure on "Dynafac", Armour & Co.

No. 5870—Multi-purpose tank car, Union Tank Car Co.

No. 5871—Feed flavor, Flavor Corporation of America.

"BROWER MIXER brings more customers... more profits"

Says Joe Ash, ASH GRAIN CO., Harristown, Ill.

"Since we installed our Brower Mixer, our customers have increased by 50 to 75% and our profits also stepped up 50 to 75%. The Brower Mixer is very economical to operate and we have never had any service problems. It has been a very good investment for us."

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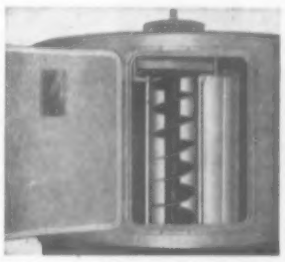
Dependability, fast mixing action and low cost operation make Brower the WORLD'S LARGEST SELLING MIXER! Brower action WHIRLS the ingredients instead of just stirring or tumbling them . . . produces the most thorough mix you can get. Every sack has the same even mixture.

FAST and ECONOMICAL — a perfect blend in about 10 minutes at a power cost of only 3¢ to 5¢ a ton. Five sizes — 700, 1200, 2000, 3000 and 4000 pounds-per-batch capacities. Above-floor and below-floor models. Heavy welded steel construction — built for years of trouble-free service.



Interior readily accessible through large hinged service door and hinged conveyor sleeve.

Notice the mixing paddle at top which WHIRLS the ingredients for the most thorough mix.

Glass observation window at eye level provides easy inspection of mixed feed at any time.

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For more than 50 years Buffalo® Corn Gluten Feed has been a standard in the feed industry. Dairymen prefer it because over the years Buffalo Corn Gluten Feed has proven to be one of the best milk producing ingredients. You too can depend on Buffalo to help you make your mix a fully balanced ration. Start using Buffalo Corn Gluten Feed.

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Denver Chemical Co. Forms New Division

NEW YORK—Formation of a new animal products division and appointment of a special representative to supervise this division have been announced by the Denver Chemical Manufacturing Co., Inc.

Samuel M. Shearman has been named to supervise the division formed to introduce a new product, Ketotest Denco, a rapid, fresh-milk test for ketosis in dairy cattle, according to Howard S. Tierney, Jr., Denver Chemical president.

Mr. Shearman, a graduate in agriculture from Rutgers University, formerly was associated with Capper Publications. He has served as a field representative of the American Jersey Cattle Club and a dairy inspector for the New Jersey State Department of Health.

With the formation of the new division, the Denver Chemical Manufacturing Co. is moving ahead with plans to distribute Ketotest Denco through retail outlets to dairy and sheep farmers.

Ketosis, or acetonemia as it is sometimes called, is a disease believed to be caused by a metabolic disorder, Mr. Tierney said. It is often confused with milk fever. Usually most prevalent in high producing cows shortly after freshening, ketosis is estimated by authorities to cost dairy and sheep men millions of dollars annually.

Pacific Molasses Co. Names Vice President

NEW YORK—Richard W. Wallace, eastern division manager of Pacific Molasses Co., has been elected vice president of the San Francisco firm, it was announced by George W. Scott, chairman of the board.

Mr. Wallace continues as manager of the eastern division. He joined Pacific Molasses in 1953, coming from W. R. Grace & Co. He is a graduate of Dartmouth College.

Grain Marketing Course to Be Given

CHICAGO—A study of "Grain and Its Marketing," a 20-lecture course designed to present the fundamentals of grain growing, handling, marketing and transportation and grain exchange procedure, will begin Nov. 21 under the sponsorship of the Grain Exchange Institute, Inc.

During the past 18 years, some 3,000 persons directly or indirectly associated with the grain trade have attended the classes. Twenty classes, each of two hours duration, will be given at 3 p.m. and 6 p.m. on successive Thursdays.

Walter M. Goldschmidt, a member of the Chicago Board of Trade and assistant vice president of the Continental Grain Co., will conduct the classes. Sessions will be held in Room 438, Board of Trade Building. Tuition is $17.50.

Arthur W. Woodin

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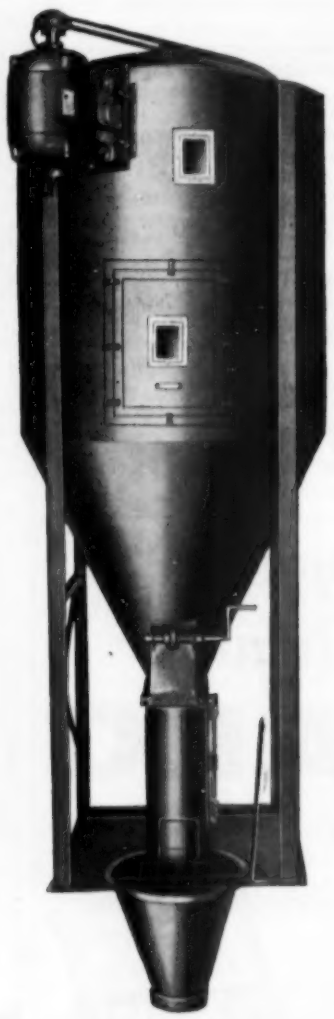
RAPID MIXING . . .

PERFECT BLENDING

. . . ECONOMY

EUREKA JUNIOR VERTICAL MIXER

- Requires less power . . . less space . . . less maintenance.
- 3 sizes . . . from 40 to 150 cu. ft. capacities.



Fast, thorough mixing action for moderate content molasses, or dry materials feed. Streamlined tank plus specially designed vertical Screw Conveyor provide free-flowing circulation of materials. Mixtures cannot lodge, become inert, or stratify.

Observation window permits instant, accurate check of mixing conditions. Quick-action slide on bagging spout opens easily . . . closes freely. Rugged welded steel construction eliminates weave or strain.

With these and other outstanding features, the Eureka Vertical Mixer can provide a new, economical answer to increased efficiency and higher profits in your plant.

- Write for Free Catalog showing complete line of Eureka grain processing machinery.

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S. HOWES CO., INC.

SILVER CREEK, N. Y. *Since 1856*

EUREKA—*Regardless*

Fleischmann's F·I·D·Y
IRRADIATED DRY YEAST
RICH IN VITAMIN D FOR FOUR-FOOTED ANIMALS

Feed Mixers Products
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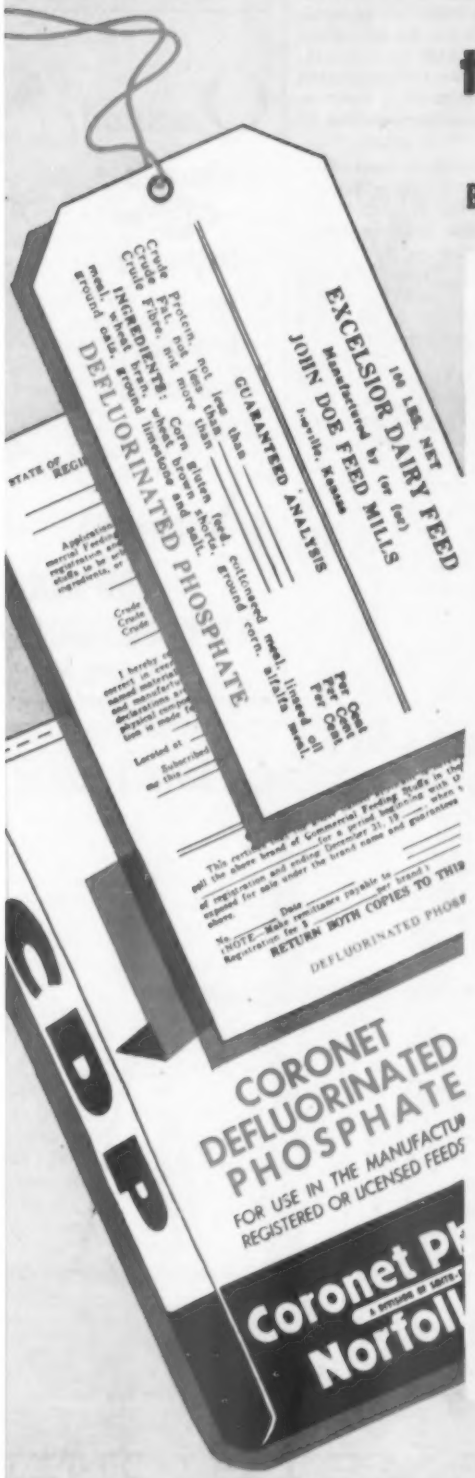
PULVERIZED
Oats or Barley
ROLLED OATS AND FEEDING OATMEAL
COLBY MILLING, INC.
COLBY, WISCONSIN
PHONE LD-160-116 TWX Colby 8446

don't limit your PHOSPHORUS source

through inadequate registration!

Be Prepared to Take Advantage of Favorable Market Conditions!



Include the term "defluorinated phosphate" on your registration forms, bags and tags, and you can interchangeably formulate with *either* defluorinated or dicalcium phosphate.

The AAFCO definition states: "**Defluorinated phosphate** includes either calcined, fused, or precipitated calcium phosphate. It shall contain not more than one part of fluorine (F) to 100 parts of phosphorus (P). The minimum percentage of calcium (Ca) and Phosphorus (P) and the maximum percentage of fluorine (F) shall be stated on the label. The term '**Defluorinated**' shall not be used as a part of the name of any product containing more than one part of fluorine (F) to 100 parts of Phosphorus (P)." (Adopted 1952.)

This definition covers the use of either defluorinated or dicalcium phosphate, **when you register your feeds to contain defluorinated phosphate.** You can restrict your phosphorus source by inadequate registration.

Register your feeds *now,* so you can use either defluorinated or dicalcium phosphate. And look to *Coronet* for your phosphorus. Coronet offers uniform quality, dependable supply, prompt service and definite delivery advantages.

GUARANTEED UNIFORM ANALYSIS

	Phosphorus	Calcium	Fluorine
CDP	17.0% min.	34.0% min.	0.17% max.

Let us figure the cost of CDP Delivered to Your Plant

CDP CORONET DEFLUORINATED PHOSPHATE

Coronet Phosphate Company

NORFOLK 1, VIRGINIA

A DIVISION OF SMITH-DOUGLASS COMPANY, INCORPORATED

Denver Chemical Co. Forms New Division

NEW YORK—Formation of a new animal products division and appointment of a special representative to supervise this division have been announced by the Denver Chemical Manufacturing Co., Inc.

Samuel M. Shearman has been named to supervise the division formed to introduce a new product, Ketotest Denco, a rapid, fresh-milk test for ketosis in dairy cattle, according to Howard S. Tierney, Jr., Denver Chemical president.

Mr. Shearman, a graduate in agriculture from Rutgers University, formerly was associated with Capper Publications. He has served as a field representative of the American Jersey Cattle Club and a dairy inspector for the New Jersey State Department of Health.

With the formation of the new division, the Denver Chemical Manufacturing Co. is moving ahead with plans to distribute Ketotest Denco through retail outlets to dairy and sheep farmers.

Ketosis, or acetonemia as it is sometimes called, is a disease believed to be caused by a metabolic disorder, Mr. Tierney said. It is often confused with milk fever. Usually most prevalent in high producing cows shortly after freshening, ketosis is estimated by authorities to cost dairy and sheep men millions of dollars annually.

Pacific Molasses Co. Names Vice President

NEW YORK—Richard W. Wallace, eastern division manager of Pacific Molasses Co., has been elected vice president of the San Francisco firm, it was announced by George W. Scott, chairman of the board.

Mr. Wallace continues as manager of the eastern division. He joined Pacific Molasses in 1953, coming from W. R. Grace & Co. He is a graduate of Dartmouth College.

Grain Marketing Course to Be Given

CHICAGO—A study of "Grain and Its Marketing," a 20-lecture course designed to present the fundamentals of grain growing, handling, marketing and transportation and grain exchange procedure, will begin Nov. 21 under the sponsorship of the Grain Exchange Institute, Inc.

During the past 18 years, some 3,000 persons directly or indirectly associated with the grain trade have attended the classes. Twenty classes, each of two hours duration, will be given at 3 p.m. and 6 p.m. on successive Thursdays.

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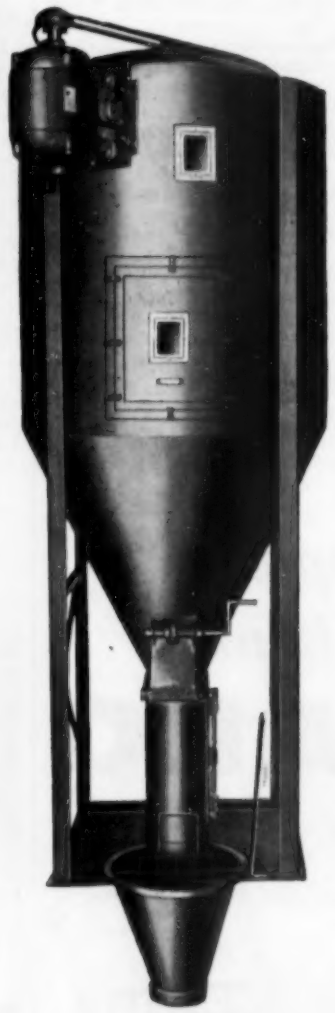

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SILVER CREEK, N. Y. Since 1856

EUREKA—Regardless

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NORFOLK 1, VIRGINIA

A DIVISION OF SMITH-DOUGLASS COMPANY, INCORPORATED

PROPORTIONING

(Continued from page 24)

may be visually inspected for accuracy. If any corrections in the selector dials are necessary, it may be done at this time with the assurance that subsequent batches will be weighed within the tolerance of the scale dial.

A blending operation may be sizable enough to warrant two mixers. This would permit alternating batches between them and thus speeding up the over-all operating rate. Such a system works well when the same feed is going to each mixer. If it is necessary to change the feed formula and mix one feed in one mixer and another feed in the other, the advantage of a semi-automatic panel would soon be lost. Under such a condition, the operator would be in constant attendance in order to change the dials between batches. If such were the case, the operator might just as well manufacture all of the feed by manually operating the ingredient feeders. One solution to such a problem would be to purchase two complete panels and alternate the feeds between these two units, thus saving the set-up time and still continuing at a high production rate.

It must be kept in mind that a semi-automatic system does not guarantee accuracy. The accuracy in such a system still depends upon the care of the operator in setting up the formulas on the control board. In the case of a manual system, the operator may make a mistake in one batch; however, in the semi-automatic type, all of the batches in one run may be improperly formulated if the board is set up wrong in the first place. In other words, the justification for such a system exists in labor saving or improved production rate. Accuracy as such should not be taken into consideration to justify the installation.

Combination System: As may be noted from the foregoing items, the entire idea of automatic proportioning centers around bulk ingredients. This does not signify, however, that a combination sack and bulk mill is not a good possibility. Since three or four items make up the greater portion of any feed mixture, these items could be handled in bulk on an automatic basis. The remaining ingredients could then be added from sacks while the bulk was automatically being scaled. Under this circumstance it would be possible for one man to formulate 9 tons per hour without other assistance. It is felt that this idea has merit in the rehabilitation of existing mills and in the design of new small plants.

Automatic Systems: There are a few completely automatic proportioning systems in existence at present. Some of those that are in operation are used only on a few ingredients; however, several have been installed in the U.S. which are used in the proportioning of a complete formula of feed.

Most of the completely automatic operations use punch-cards or punched tapes to actuate the system. Other than the card or tape reading device on the machine, the principles of operation are very similar to the semi-automatic type. A number of advantages for punch-cards and tapes have been cited. Among these advantages is a definite plus factor for quality control. The punch cards would normally be made up in a central formula office. These cards would then be sent out to company plants at any location in the country. Assuming that the cards were correctly tabulated in the first place, we could say that the human factor in blending is completely removed and that each batch manufactured from punch cards would be absolutely correct, save any malfunctioning of the electrical equipment. Such an automatic system also provides maximum security in the confidential nature of feed formulas. It would only be necessary for a few of the management people at a plant location to have the ability to read the cards submitted from the formula department.

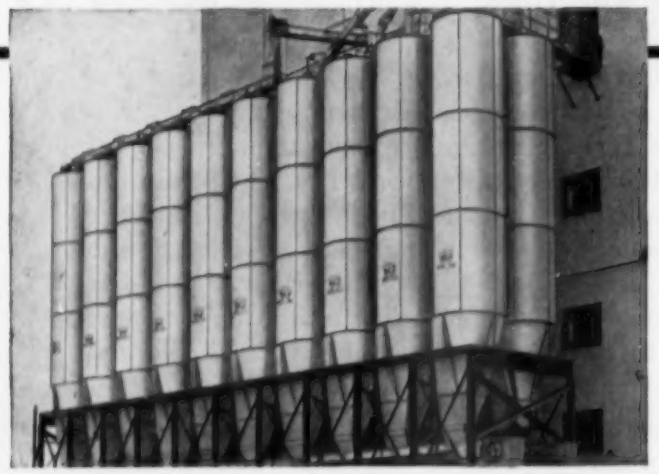
While there are a number of advantages in using an automatic system in formulation, there are some problems at the present time which have not been completely overcome. Paramount among these is the fact that it is difficult to determine in advance the amount of air weight material which would result at the completion of each ingredient sequence. One possible solution to this problem is that the punch-cards be made up at the plant location. This would allow the plant personnel to calibrate the cards for each formula situation.

The use of punch card and tapes

Question:
Who sells DOW Methionine for healthier, handsomer animals?

Answer:
BOWMAN FEED PRODUCTS, INC.
Holland, Mich.

Cut Material Handling Costs with
DAY BULK MATERIAL TANKS

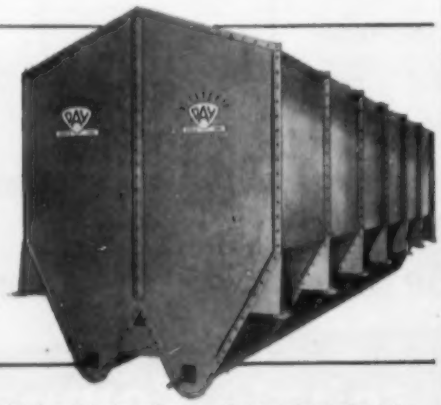


Each of these DAY vertical bulk material tanks has an approximate storage capacity of one carload. They serve as storage tanks for a packaging line as well as for truck and railcar loading. Every day more and more plants find large quantities of dry bulk materials can be handled more economically using DAY bulk material tanks. They save labor, containers and storage costs.

DAY bulk material tanks are made of black iron, galvanized or stainless steel. They are built and shipped in *easily erected, bolted sections*. Vertical tanks are furnished in sizes from 3 to 14 feet in diameter, up to 100 feet high. No support is required above the cone level. Patented, suspension discs are available for vertical type tanks to prevent bridging and assure free flow of product.

DAY Horizontal Bulk Material Tanks

Using DAY horizontal bulk material tanks, companies report savings of up to 25¢ per bag compared to handling bulk materials in bags. Ideal for buildings with limited headroom. Standard or special sizes available. Low installation cost.



For detailed information on bulk material storage tanks and pneumatic conveying equipment to suit your production and storage needs, write toDAY for Bulletins 529 and 549.

The DAY Company

Sold in United States by
The DAY SALES Company
819 Third Ave. N. E., Minneapolis 13, Minn.

Made and sold in Canada by
The DAY Company of Canada, Ltd.
P.O. Box 709, Fort William, Ontario

Representatives in Principal Cities

DAY BULK MATERIAL HANDLING SAVES MONEY

profit in the balance?

DOW METHIONINE

Just a pound of Dow Methionine per ton of poultry feed is usually plenty to keep feed efficiency . . . and profits . . . at top level. When ingredient changes upset the protein-calorie balance or natural methionine content of your formula, Dow Methionine can correct it. You'll protect the performance and salability of your feeds. Most registered poultry feeds contain this profit protector . . . does yours? THE DOW CHEMICAL COMPANY, Agricultural Chemical Sales Dept., Midland, Mich.

YOU CAN DEPEND ON DOW

W. T. Minor

TRAFFIC POST—W. T. Minor, formerly general freight agent for the Frisco Lines at Ft. Worth, has been named traffic manager for the Texas Farm Products Co. at Nacogdoches, Texas, according to Steele Wright, general manager. Mr. Minor had worked in the traffic department of Frisco for 28 years. For the past five years he has served as general freight agent in charge of rates and divisions for the Texas lines. Mr. Minor has also been associated with the Katy Railroad, Cotton Belt Route and Missouri-Pacific in his 58 years of railroading.

in the proportioning system opens up the door for automatic accounting procedures which could be tied in with the cards. It would be possible to maintain disappearance records with cards, and thus provide an ingredient inventory any time of day that management might require.

Ingredient Usage Recording: It is possible to include a printed disappearance record for all ingredients with any of the three types of proportioning systems. In a manual system, a printed tape attachment would be a part of the scale dial. In the case of the semi-automatic and the automatic systems, an automatically controlled adding machine would print the cumulative weights of material and the bin number from which it was drawn.

Several manufacturers of scale equipment have gone so far as to provide a separate usage meter for each ingredient. This, of course, would be the best means of accounting for inventory because cumulative weights would not have to be subtracted from one another to find actual usage as would be the case in most printed tape systems.

Manual Continuous System: As previously described, this type system would consist of a volumetric or gravimetric feeder beneath each of the ingredient bins in the mill. At formula change time, it would be necessary for the operator manually to reset each of the feeders that is affected in the formula change. Upon completion of this operation, the operator will start up the blending line and send the first part of the run to a set-off bin. This first part of the feed, of course, would not be up to standard until all of the ingredients had formed a complete sandwich from one end of the feeder pick-up conveyor to the other.

One point that is a definite problem on the continuous type system is the necessity of very frequent feeder calibration checks. This is normally done by taking a time sample from the feeder during a production run. Actually very few manually operated continuous flow systems have been installed in new feed mills since the war.

Automatic Continuous System: Several automatic continuous systems

SUNSET FEED & GRAIN CO., INC.

PHONE CLEV. 2938 — 805 Dun Building Buffalo 2, N.Y. — TWX BU 71

FEED JOBBERS
AND
DISTRIBUTORS OF

KELLOGG HOMINY FEED — HUBINGER GLUTEN FEED
DYNAFOS DICALCIUM PHOSPHATE AND MULTIFOS
SODIUM BENTONITE
PACIFIC MOLASSES — PILOT OYSTER SHELLS
DU PONT'S "TWO-SIXTY-TWO" FEED COMPOUND
STONEMO GRANITE GRIT — CALF MANNA
NOPCO FEED SUPPLEMENTS
WHEAT GERM — WHEAT GERM OIL
AGRI-TECH ALFALFA PRODUCTS

INQUIRIES APPRECIATED

INEXPENSIVE VITAMINS A & D

DEVOLKOD VITAMIN OILS
(Fortified Cod Liver Oils)
DEVOLKOD NON-DEST. COD LIVER OIL USP
DEVOLD VITAMIN A & D FEEDING OILS
DEVOLD VITAMIN A OILS also
PEDER DEVOLD WHEAT GERM OIL

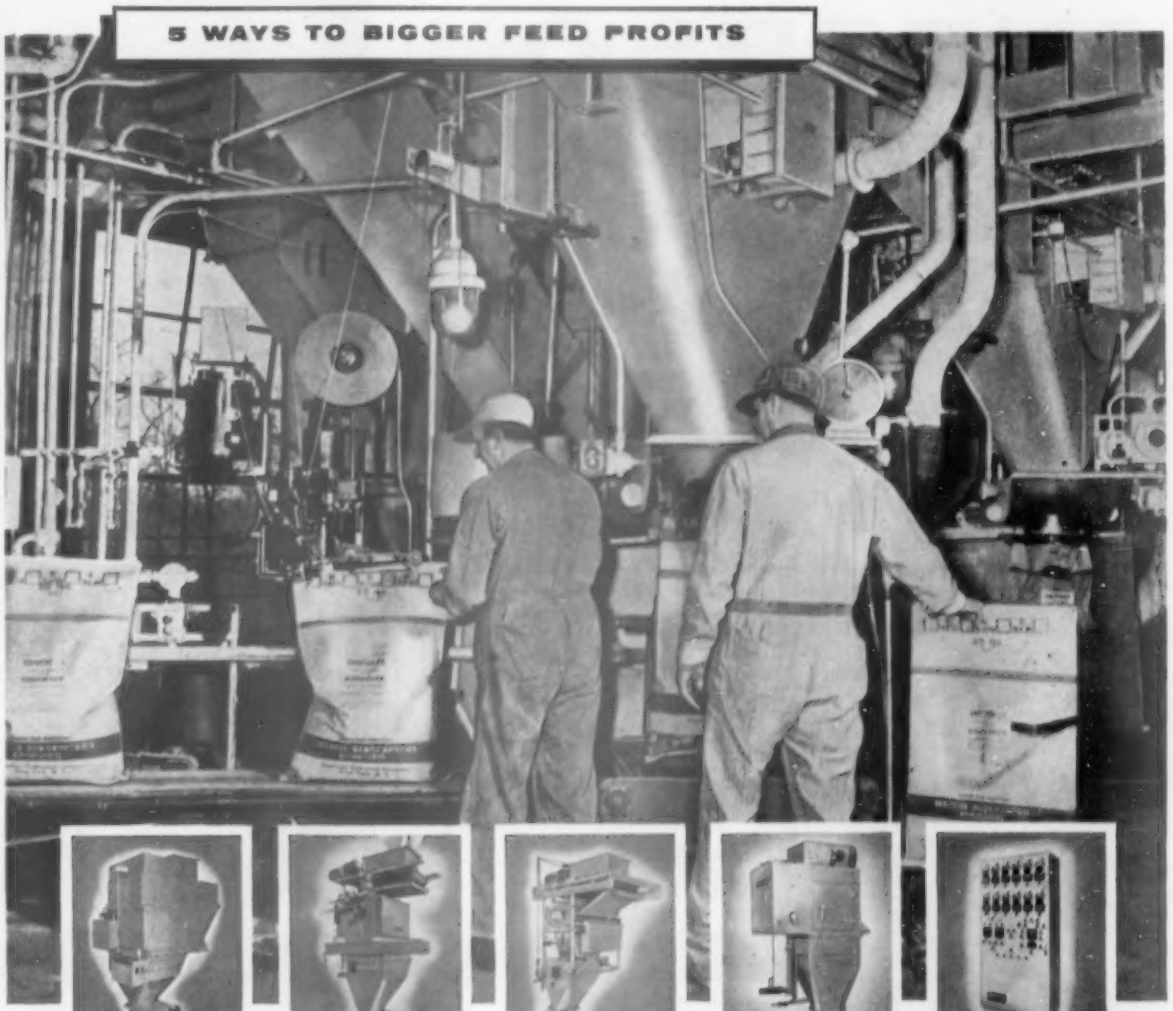
PEDER DEVOLD OIL COMPANY
45-FM Clinton Ave., Brooklyn 5, N. Y.

Make Your Customers
GOOD Customers . . . all year 'round

SUPREME Brand
Condensed BUTTERMILK

HERBERT K. CLOFINE, Inc.
MILK PRODUCTS
115 South Smedley St. Phila. 3, Pa.

5 WAYS TO BIGGER FEED PROFITS

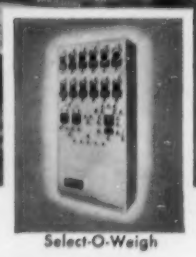


HB-39 Bagger

GA-38 Bagger

FPA Bagger

E-50 Bagger


Select-O-Weigh

Modern Richardson weighing equipment solves feed handling problems

For over 55 years, Richardson has been supplying the feed industry with specialized weighing equipment . . . helping feed manufacturers keep pace with changing requirements, profitably.

Newest Richardson development for the Feed Industry, the HB-39 outstrips all other scales for combined speed and accuracy. Rugged and dependable, the HB-39 can bag up to 24 50-lb. bags of feed per min. within an average accuracy of ± 2 ounces! Think of this in terms of production line profits!

The GA-38 and the FPA, the former for all feeds and the latter for grains and pellets, provide high speeds—up to 15 50-lb. weighings per min. at ± 0 to 3 oz. accuracies—and extreme versatility. Weighs down to 25 lbs.

The Richardson E-50 bagger has been the workhorse of the industry for years, with many hundreds in operation today, paying for themselves over and over again in fast, efficient bag production. And Select-O-Weigh proportioning systems for large and small feed mills are the latest word in high quality, automatic feed formulation.

These are just five of the superior products Richardson has developed especially for Feed Industry application. Because of Richardson's knowledge of your feed-handling problems, you can count on finding the money-saving solutions built right into every Richardson scale . . . and at a price you can afford! Write today for particulars on Richardson bagging and proportioning equipment.

Richardson
MATERIALS HANDLING BY WEIGHT SINCE 1901

RICHARDSON SCALE COMPANY, CLIFTON, NEW JERSEY
Atlanta • Boston • Buffalo • Chicago • Cincinnati • Houston • Memphis • Minneapolis
New York • Omaha • Philadelphia • Pittsburgh • San Francisco • Wichita • Montreal
Toronto • Havana • Mexico City • San Juan • Geneva, Switzerland • Nottingham, England

are in operation throughout the U.S. and in most cases consist of gravimetric feeders which are remotely controlled from a central operating panel. The central panel location makes it very convenient for one operator to set up formulas and monitor the operation conveniently. The set-up of formulas may be handled in a similar manner to a batch system, by dialing the desired weights of the various ingredients. Such continuous automatic systems are almost as versatile as a batch operation and equally as accurate. An automatic continuous blending system is very expensive, and it is debatable whether there is any advantage over a batch system.

The setback problem has been eliminated by timing the startup of each feeder at the start of a run so that the flow of feed on the pickup conveyor will start with the feeder at the furthest end. As the feed from the end unit approaches the feeder next to the end the second feeder starts and so on down the line in such a manner that a perfect sandwich is formed by the time the feed flow reaches the end of the conveyor. This eliminates any need for setbacks at the start of a run. Naturally, such a timed delay can also be done on a manual continuous system.

Concluding Thoughts: If one is contemplating the use of automatic controls, he should not be lulled into thinking that it is a cure-all for plant inefficiencies. A careful study should be made to insure that such a system will do fully what is expected. An actual run-through of its operation should be gone over with the manufacturer. Items like the inconvenience of setting up formula changes frequently in order to alternate between two mixers are important.

In reality a manual push-button arrangement may serve the same purpose with no added manpower, but will save the cost of automatic controls. With only 20% or less of the total plant manhour requirements in the mixing phase of milling we can look to very little opportunity for savings in this department. It might be said that almost anything is possible in the use of automatic controls if money is no object. However, we must look closely at our justifications of such refinements, as mere niceties do not necessarily mean added profits.

Archer-Daniels Feed Salesman Appointed

MINNEAPOLIS—Louis G. Flentge of Berryville, Ark., has joined Archer-Daniels-Midland Co. as a formula feed salesman in the firm's southwest feed division, it was announced by Elmer H. Ziegenhagen, director of sales for Archer Booster Feeds.

Mr. Flentge is former owner of the Cardinal Feed Store in Berryville and before that was with the Mound Poultry Farm, Springfield, Mo. He has been associated with the feed business in sales and management positions since 1949.

Utah Farmers Win $34,839 Judgments For Fluorine Damage

SALT LAKE CITY—Some 48 Utah farmers recently won $34,839 in judgments against U.S. Steel Corp. for damage to livestock by fluorine from the Geneva Steel plant.

More than 300 farmers in Salt Lake, Utah and Wasatch counties had filed 26 separate lawsuits asking some $25 million in damages. The suits had claimed that livestock and crops had been damaged by the fluorine effluents from the steel plant.

The court ruled against the farmers in all cases based on alleged damage to crops, stating that the plaintiffs failed to prove that effluents from the steel plant had damaged their property.

Willis W. Ritter, federal judge, held that 18 of the farmers were entitled to recover $10,880 in absolute damages.

Another 30 were ruled to receive $23,959 in conditional judgments whereby farmers may sell animals of questionable health to the steel company within 30 days after entry of judgments.

Suits for the rest of the farmers against the steel company were dismissed or ruled against by the court.

Sprout-Waldron Names Mexico City Agent

MUNCY, PA. — The appointment of Beneficios Agricolas, S. A., of Mexico City as exclusive sales agent in Mexico, has been announced by Harold J. Alsted, vice president in charge of sales, Sprout, Waldron & Co., Inc.

Beneficios Agricolas, S. A., will handle the sales of Sprout-Waldron equipment in the animal feed and grain processing industries, as well as equipment for rice and vegetable oil milling. The firm will maintain a sales and engineering force in Mexico, and will work closely with the engineering department of the firm in Muncy in order to serve the growing needs of the Mexican feed and grain processing industries, Mr. Alsted said.

ADDS CUSTOM PLANT

BELVIDERE, NEB.—Don Gaston, manager of the Belvidere Grain Co., has announced the addition of a custom grinding and mixing plant to the facilities here.

ANDERSON

VEGETABLE OIL PROCESSES

Low Residuals
High Capacities
Economical Operation

EQUIPMENT and PROCESSES for every VEGETABLE OIL BEARING MATERIAL

- babassu kernels
- cashew nuts and shells
- castor beans
- copra
- corn germs
- cottonseed
- flax
- ground nuts
- hemp
- mowrah seed
- mustard seed
- palm kernels
- pecans
- rape seed
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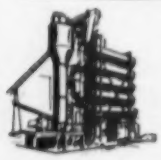
- safflower seed
- sesame
- soybeans
- sunflower seed
- tung nuts
- and many others

ANDERSON PROCESSES

High Capacity Expellers
A high-speed mechanical Expeller screw press process

Disolex Solvent Plants
Direct solvent extraction for all oil press cakes



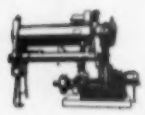
Exsolex Process
The patented Expeller prepress, solvent extraction method

Meal Extraction
Low-cost, prepress solvent process to produce granular meals

AND VEGETABLE OIL MILLING EQUIPMENT

Dryers
High capacity removal of moisture from grains and vegetable oil seeds

Flaking and Rolling Mills
Make uniform flakes of any specified thickness



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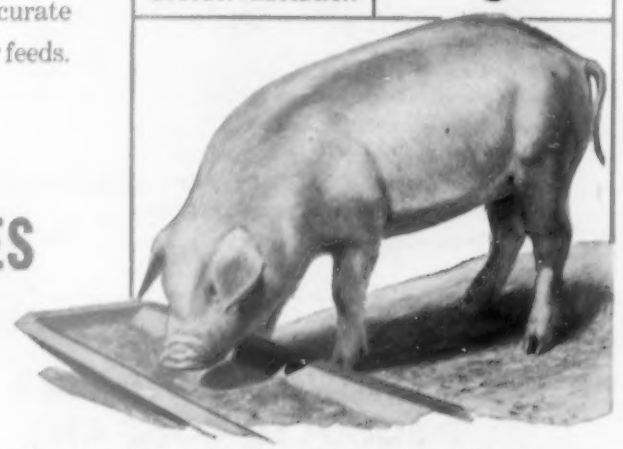
Double Check Indispensable B_{12} Levels in your Poultry and Swine Rations

Vitamin B_{12} is so essential for the proper performance of all types of poultry and swine rations that it deserves special attention. In these days of increased use of high energy, B_{12}-poor feedstuffs, it is increasingly difficult to add enough B_{12}-rich natural feedstuffs economically. At the same time the B_{12} content of natural materials is highly variable.

When you rely on Merck Vitamin B_{12} Supplements, you can count on getting absolutely the precise amount of B_{12} called for by your formula. The B_{12} will not only be there in the ration but it will be 100 per cent biologically active. This assures maximum feed efficiency economically because less overage is required, and you can get by with less expensive animal protein. Three different Merck Vitamin B_{12} Mixtures are available to meet your special need. All three are specially formulated to facilitate accurate mixing and uniform distribution in your feeds.

Type of ration	Recommended levels of vitamin B_{12} in micrograms/lb.
POULTRY	
Broiler	10
Chick Starter	10
Chick Grower	10
Layer	10
Chick Breeder	10
SWINE	
Starter-Prestarter	20
Grower	10
Breeder-Lactation	5



MERCK VITAMIN MIXTURES AND VITAMINS

Research and Production for Better Poultry and Animal Health

MERCK & CO., INC. · Chemical Division · Rahway, New Jersey

"Traveling Stores" Used to Sell Farm Supply Items

By Al P. Nelson

Getting customers into the store is the job of any retailer, but for the Wisconsin Milling Co., Menomonie, Wis., the job has a reverse twist. This feed firm takes the farm supply store to the customer.

The company has on wheels two stores—large trucks with transport bodies loaded down with a sizable stock of seasonal farm supply items.

Items such as baling twine, block salt, dairy filter discs, farm chemicals, poultry and livestock remedies and oyster shell go into the trucks. The items may vary with the season.

The trucks accompany portable mills called out to the farms for grinding and mixing jobs, and they carry the various farm supply items along with concentrates used in custom mixing.

The two truck stores have double doors on the back and left side. If the weather is right, the first thing the driver does when he pulls into the farm yard is to open all the doors, exposing the contents to anyone who happens to saunter up. Few can resist the impulse to look over the stock in the truck. That's often the starting point for impulse sales.

The side doors have price boards attached where specials can also be listed. Thus the store is set up for business minutes after it reaches the farm.

Sell Seasonal Items

Lawrence Maves, one of the drivers for the firm, said: "We are able to sell quite a few seasonal items through the truck displays. Farmers know we carry quite a stock, and they look into the truck when we come to see if there is anything they might need. Often a farmer tells us to bring something along on the next trip, or he orders something he needs right away for us to send out by another truck."

From a sales standpoint, the cost of selling by truck is quite low, R. L. Pierce, president of the firm, said. The truck is needed on the premises for the concentrates used in mixing, he said, and the operator can sell items from the truck while he is idle. Also, since the farmer buys some items on impulse, this is one way to get extra sales and tie in the farmer's business with the firm on practically a one-stop basis.

Harold Erickson, office manager, said the company plans to push more selling with the traveling feed stores. Besides getting the items out on the

COMPLETE SERVICE—A farmer at left is shown discussing a purchase of some baler twine from a Wisconsin Milling Co. traveling store. Doors in the traveling stores open from the rear and also on one side. On the inside of the doors are price lists and space for advertising specials the trucks might be carrying. The new service has been so successful that officials of the feed firm plan to expand the "store to the farm" operation in the near future.

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Wisconsin Milling Co. Feed News

MENOMONIE, WISCONSIN, MARCH, 1957

Management Recommendations For Brooding Turkey Poults

Uniform Recommendations Of American Feed Manufacturers Association Are The Result Of Intensive Study.

More turkey losses occur in the early poult stage than at any other period. Faulty management is usually responsible. Often, staggering losses can largely be prevented by simple improvements in management and with very little extra expense. The fourteen recommendations below have been adopted by the Nutrition Council of the American Feed Manufacturers Association after intensive study. They are based upon the carefully considered judgment of more than 100 authoritative sources, including the nation's Land Grant Colleges and Experiment Stations.

HOUSING MANAGEMENT

1. With hover brooding of poults, temperature at edge of hover three inches above the floor should be 95 degrees F. at the start. Drop temperature 5 degrees each week to 6 weeks, considering at all times the behaviour of the poults. Room tem-

Turkey Feed Utilization

Turkeys make their most economical gains during the first 16 to 18 weeks, according to Glenn H. Thacker, extension poultryman at Iowa State College. After that—as the birds reach

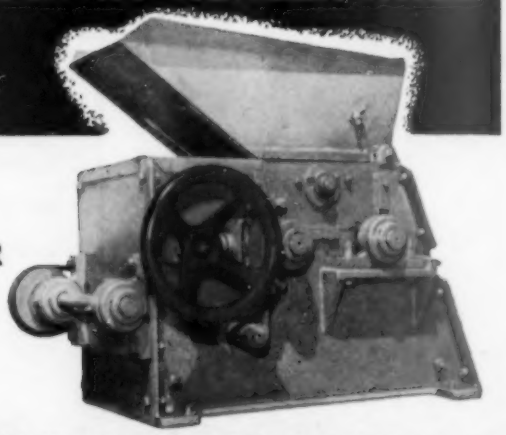
Advantages Reported For Weaning Pigs Early

Lower feed cost was one of several advantages of early-weaned pigs pointed out recently by the University of Kentucky experiment station. Trials with 21 spring litters and 20 fall litters were conducted by the animal husbandry department.

Early weaning also permits sows to be rebred soon after weaning, fed for market, or carried on pasture

SERVICE PUBLICATION—Along with a good advertising program, the Wisconsin Milling Co., Menomonie, Wis., serves its customers with advice on feeding and management. The advice is sent to the farmer in a four-page publication three times a year at a cost to the milling firm of about $200 per issue. Shown here is part of the front page of the publication.

W-W GRAIN ROLLER MILL



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Write for complete literature on W-W Roller Mills. Also on the famous W-W Hammermills, Permanent Magnetic Separators.

W-W GRINDER CORP.

Dept. 311 Wichita 4, Kansas

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TRAVELING FEED STORE—Lawrence Maves (left), an employee of the Wisconsin Milling Co., Menomonie, Wis., shows the wares in one of the firm's traveling stores to a farmer customer. The display brings impulse buying as well as other purchases of various articles needed by the farmer. Most of the items are seasonal or "impulse" type articles. The stores have expanded the trade area and annual sales volume of the feed firm.

farm where they're easy to buy, the items are shown to a greater customer potential than otherwise, he said.

"As farmers get accustomed to the idea, they buy more and more," Mr. Erickson said. "It increases the dollar sales at each stop, and that's important in the matter of spreading costs over a larger volume."

He said further that the traveling stores have extended the trade area the firm can cover efficiently.

Service, courtesy and dependability are important in any business, and the Wisconsin firm stresses these points in calls on farmers.

The truck operators also point out to the farmer that barnyard surfacing to accommodate all-weather truck service is an advantage to the farmer. Where there is no all-weather surface, the firm has been able to avoid trouble with the use of tandems in heavy snowfall.

Feed and Grain Milling

The traveling stores are a supplementary part of the company's over-all feed and grain milling business.

The company has a feed mill in Menomonie, and it also has facilities for processing grain for shipment to other areas.

The over-all operations, company officials said, are such that employees are kept busy through the year.

Advertising

Advertising is used to keep the firm before the public. It has a radio program, "Barter Mart," during a good 12:05 to 12:15 time which consists of spot commercials of the various services of the firm, along with free want ads for persons with merchandise to sell. The program is closed, however, to commercial firms.

Mr. Pierce said the radio program is well liked. Its cost is about $200 a month.

Another service of the firm is a syndicated magazine which the firm has titled "Wisconsin Milling Company Feed News." The paper gives general feeding and farm facts and carries ads of the company services. Issued about three times a year at a cost of $200 per issue, the paper is sent to approximately 2,000 farmers in the trade area.

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saves Multiwall user $8 per M through specifications review

A leading company, already using 43 different sizes and types of Multiwalls, planned to add new products to its line. Union Packaging Specialist Don Deininger recommended a simplification of Multiwall specifications and inventory. Union prepared a Specifications Manual for the manufacturer, also simplified, unified and modernized his bag designs.

Union Multiwall Recommendations are based on this 5-star Packaging Efficiency Plan

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- SPECIFICATION CONTROL
- PLANT SURVEY

Results: user reported: (1) Union's recommendations for re-designing bag sizes and constructions in some instances saved as much as $8 per M.

(2) The new Specifications book enabled the customer to order bags more easily and accurately. It also simplified his inventory control.

(3) The new designs established a visual relationship between his family of products, enabled his sales force to do a better merchandising job.

This is a typical example of Union's 5-Star Multiwall Plan in action. Perhaps it can produce gains in your own Multiwall packaging operation. Write for additional information.

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UNION'S PACKAGE ENGINEERING DEPARTMENT will study your Multiwall bagging methods and equipment and make appropriate recommendations, regardless of the brand of Multiwalls you are now using.

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National Agricultural Outlook Conference Slated Nov. 18-21

WASHINGTON—Extension service economists and home management specialists from 46 states, Hawaii and Puerto Rico will meet in Washington Nov. 18-21, for the 35th National Agricultural Outlook Conference. Representatives of the U.S. Department of Agriculture's marketing, research, foreign agriculture, forestry, commodity stabilization and federal extension services also will participate in the conference, which is sponsored by USDA.

C. M. Ferguson, administrator of the federal extension service and chairman of the conference, said the four-day meeting will be devoted to study of the national and international economic outlook, long-time agricultural trends and the immediate outlook for agriculture, including specific agricultural commodities.

The conference will open with an analysis by John W. Evans, deputy director of the office of intelligence research, U.S. Department of State, of the world situation as it affects the outlook for agriculture. A panel of leading agricultural, governmental and business spokesmen will discuss implications of the world situation to agriculture. The afternoon session of the first day will be devoted to study of the national economic situation and outlook for 1958.

The morning program Nov. 19 will center on the agricultural and family living outlook for 1958, and the afternoon program will center on the effects of marketing changes on the outlook. Topics for discussion include nutrition research and education, marketing costs and domestic and foreign market development.

The last two days of the conference will be devoted to the outlook for specific agricultural commodities and for family living.

Problems with Treated Seed Discussed

ST. LOUIS—Problems and programs in preventing treated seed from entering food or feed channels were discussed at a meeting of representatives of the Grain and Feed Dealers National Assn., the American Seed Trade Assn. and the National Agricultural Chemical Assn.

For several years GFDNA has urged country warehousemen to be alert to the "pink wheat" hazard and to be cautious when purchasing grain that may have been commingled with treated grain. Use of black light to detect treated seed is now commonplace in many country elevators. Chemical manufacturers also are coloring all liquid fungicide treatments, which now account for about 75% of all treatments.

One state (Michigan) has passed a law requiring that all chemically treated seeds be colored. This statute has caused widespread comment among the grain, seed and chemical trades.

Representatives of ASTA and NACA were generally opposed to a federal or state law requiring treated seed to be colored. Some reasons for their views were:

1. A mandatory law requires a government official to determine the degree of coloration (it is generally necessary to add additional dye).
2. Difficulty in applying dye.
3. The inclusion under the law of hybrid seed corn and other seeds where the problem is minor.

GFDNA reviewed the work that has been done by country elevator operators and extension workers in orienting farmers to the risks and responsibilities involved. GFDNA also stressed the financial loss to be faced by any warehouseman who has a car or a bin of grain contaminated by mercury-treated kernels.

GFDNA is now surveying its members to learn more about programs that are practiced in various states to prevent treated seed from entering food or feed channels.

Edward Street

JOINS RED HAT—Edward Street has joined the sales staff of the Red Hat feed division of Alabama Flour Mills, Decatur, Ala., it is announced by Earl Mitchell, sales manager of the feed division. Mr. Street, born and reared on a farm, has had extensive sales experience in the meat packing and feed supplement field. Before joining Red Hat, he was with Moorman Manufacturing Co. He will manage the south-central Tennessee feed territory for Red Hat.

FEED SHIPMENTS RISE

WINNIPEG—Shipments of primary or concentrated feeds in Canada rose in August to 28,395 tons from 25,113 a year earlier. Secondary or complete feeds rose to 177,134 tons from 176,267 and all other animal feeds to 49,579 tons from 48,108. January-August shipments of primary feeds increased to 234,130 tons from 208,766, secondary feeds to 1,377,088 tons from 1,352,620, but all "other" animal feeds declined to 342,166 tons from 362,643.

Pure whey supplement for your feeds:

KRACO

The fresh-dried whole whey that's naturally sweet

- no neutralizers added to upset milk mineral balance
- no fermentation to reduce high lactose content*

**Kraco is guaranteed at least 65% lactose—runs are usually between 70-72%*

Kraco is made by Kraft—the country's largest producer of raw whey.

In processing this important feed supplement, Kraft uses the whey from low-acid cheese—and dries it within hours after it is drawn from the cheese vats.

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Kraco contains all the whey nutrients, including the valuable whey factor, lactose (minimum 65%), milk protein (12%, mostly lactalbumin), milk minerals and B complex vitamins.

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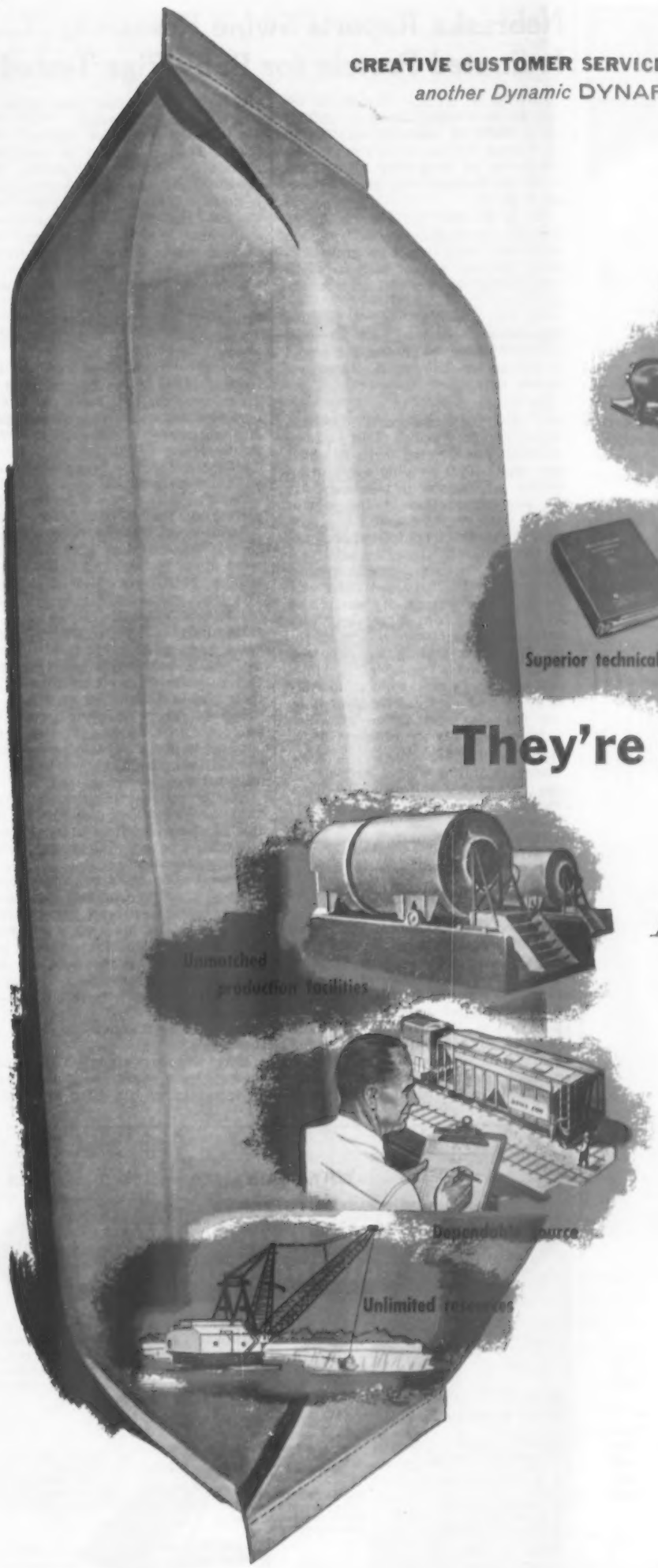

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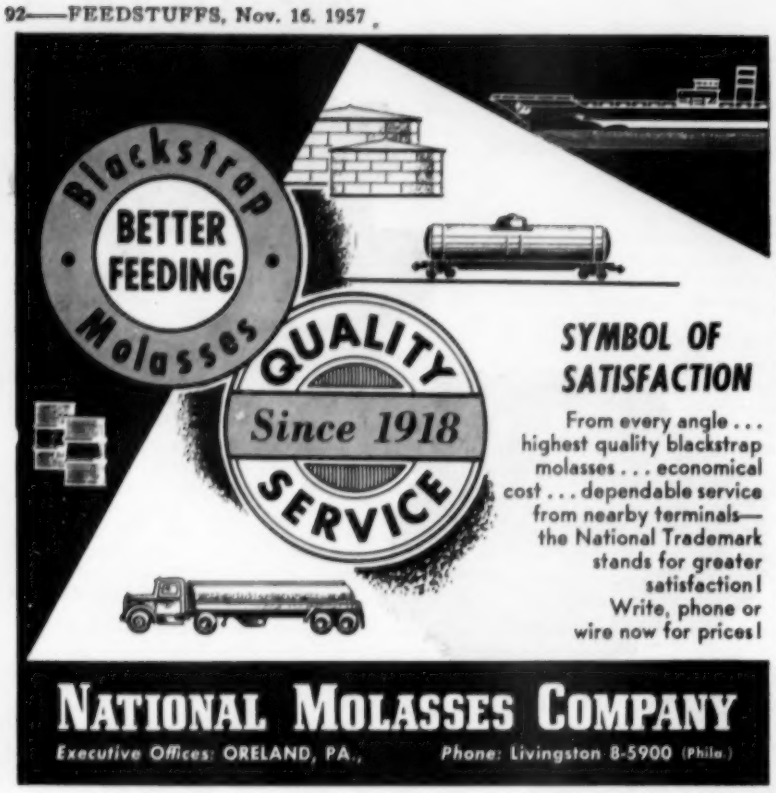
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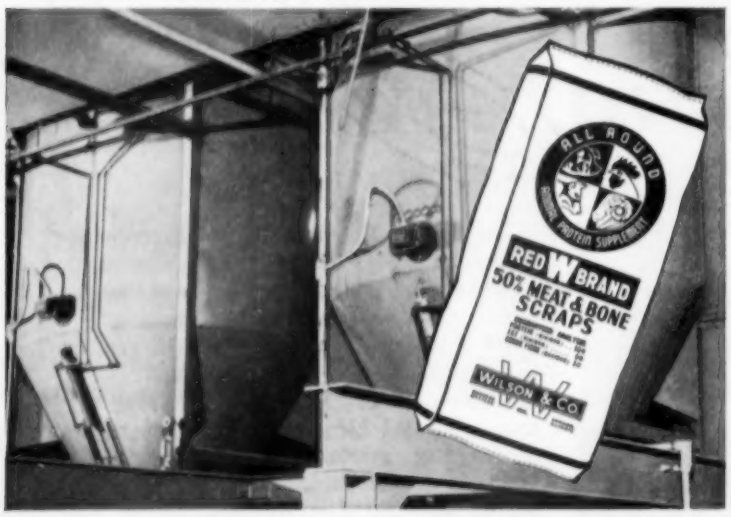

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Nebraska Reports Swine Research; Iodinated Protein for Baby Pigs Tested

LINCOLN, NEB. — Results of recent swine feeding research, including a study of iodinated protein in pig starter rations, were reported by University of Nebraska researchers at the university's 22nd annual Rooters Day.

Dr. E. R. Peo, Jr., and Dr. D. B. Hudman reported on the tests, which dealt with such things as grain sorghum feeding, use of various additives, lactose sources and early weaning.

Dr. Peo reported that a positive response was obtained with 20 milligrams of iodinated protein per pound of ration for baby pigs. More research, he said, is needed.

He noted reports that baby pigs may not have sufficient digestive enzymes to fully utilize plant proteins (soybean meal) from birth to about five weeks. Two possible ways to alleviate an enzyme insufficiency are (1) supplementation of the starter ration with enzymes and (2) an increase in metabolic output of enzymes by the baby pig. Dr. Peo said that results of feeding enzyme-supplemented starters have not been consistent. No research, he said, has been reported on increasing the metabolic output of enzymes by the pig. Therefore, a study was conducted to determine the effect of iodinated protein (a metabolic stimulant) on gains and feed efficiency of baby pigs fed a starter ration in which soybean meal was the primary source of protein.

Average initial weight and age of the pigs were 6.3 lb. and 8.9 days, respectively. The test period covered 28 days. Eighty crossbred pigs were used to determine the effect of levels of iodinated protein on gains and feed efficiencies.

Dr. Peo summarized the test as follows:

"As expected, the best gains and feed efficiencies were observed with pigs fed the positive control ration (dried skim milk). However, pigs fed a soybean meal basal ration plus 20 mg. of iodinated protein per pound made gains comparable to those made by the pigs on the dried skim milk ration. Pig gains decreased and the feed required per pound of gain increased as the level of iodinated protein was increased from 20 to 40 mg. per pound of ration.

"Although a positive response was obtained with 20 mg. of iodinated protein per pound of ration, the physiological nature of this response is unknown. It can be theorized that the iodinated protein (as a metabolic stimulant) may have increased the enzyme output of the baby pig, thereby permitting better utilization of the plant protein, soybean meal. However, future research will confirm or refute this theory."

Other trials were reported as follows by Dr. Peo:

Grain sorghums: Research on the feeding value of several varieties of grain sorghum indicates that this feed is comparable to corn for producing gains in growing-finishing swine. However, it requires 0.2 to 0.7 lb. more feed to produce a pound of gain with sorghum than with corn when sorghum is used as the complete grain portion of a swine ration.

Studies made with various sorghums showed that greatest gains were made by pigs fed rations containing Martin or Hybrid RS-501. The least gains were made by pigs fed Hybrid RS-610.

Results also indicate that greatest gains were made by pigs fed a grain ratio of ⅛ corn to ⅞ milo. Pigs fed this ration also made greater gains than pigs fed an all-corn ration in the tests. There was practically no difference in the amount of feed required per pound of gain with either the all corn or the ⅛ corn and ⅞ milo rations.

Starter rations: The best performance was shown by baby pigs fed starter rations with corn, meal form, followed by oat-groats (ground hulled oats), pellet form.

However, on the basis of feed efficiency, both corn and oat-groat starter rations fed as pellets were superior to the meal form of these rations. Less feed was required per pound of gain by the pigs fed the starter ration with corn, pellet-form, than with any of the other ration treatments.

Dr. D. B. Hudman reported on these experiments:

Early-weaning study: This study showed that there was very little difference in the three, five and eight-

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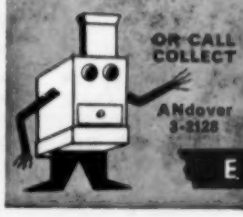

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week weight of early-weaned and sow-raised pigs.

The average feed consumption of the early-weaned pig was 28.5 lb. greater than for the sow-raised pig. About 20 lb. of this feed was consumed before the sow-raised pigs started to eat their creep feed.

A 0.25% pepsin supplement in the starter ration for the early-weaned pigs did not improve pig gains or feed efficiency.

The feed cost (including the sow feed) per pig from birth to eight weeks of age was calculated to be 36¢ cheaper for the early-weaned pigs than the sow-raised pigs. The relative costs and eight-week pig weights of the two systems make it possible to early-wean pigs economically if adequate housing and equipment are available.

Feed additives: One hundred growing-finishing pigs, with average initial weights of 81 lb., were used to compare rations containing supplements of arsanilic acid, Aureomycin, hygromycin and 3-nitro 4-hydroxy phenylarsonic acid with an unsupplemented ration. Aureomycin and arsanilic acid fed pigs gained the most rapidly, but none of the supplements were effective in significantly improving the gains over the control group.

Arsanilic acid produced the best feed efficiency and hygromycin the poorest, but none of the feed efficiency ratios were significantly different from that of the control group.

Hygromycin was effective in eliminating worm eggs from the pigs by eliminating the adult worm, but was ineffective in increasing gains or improving feed efficiency.

Protein levels: This study of protein levels for growing-finishing swine on pasture and in dry lot showed that pigs fed in the dry lot made greater average daily gains than the pasture-fed pigs (1.60 lb. vs. 1.44 lb.). However, the pasture-fed pigs required less feed per pound of gain compared to those fed in the dry lot (3.02 lb. vs. 3.28 lb.). There was very little difference in average daily gain and feed required per pound of gain between the pigs fed 12% and 14% protein rations.

Samples of the carcasses of the pasture-fed pigs were slightly leaner than the dry lot fed pig carcasses, based on average backfat thickness and estimated percentage of fat and lean in the carcass. There was a slightly higher dressing percentage for the pigs that were fed in dry lot than the pigs fed in pasture. There also was about a 1% higher dressing percentage for pigs consuming the 14% protein compared to those that received 12% protein.

M. Danielson, a graduate student in animal husbandry, reported on this study:

Lactose for baby pigs: Greater pig gains were observed and less feed was required per pound of gain when pigs were fed dried whey as a source of lactose compared to those receiving feed-grade lactose. However, when casein was added to the feed-grade lactose ration in an amount equivalent to that furnished by dried whey, baby pig gains were superior to those made by the pigs fed dried whey.

Pigs fed dried skimmilk as a source of lactose made significantly greater gains. Since dried skimmilk possesses other qualities along with lactose, it is very probable that lactose is not the sole factor involved.

Pigs fed rations containing one of

Advertisement

Alfred Buckneberg

BETTER THAN EVER—36 Hereford calves set a new record of performance for Alfred Buckneberg, Centerville, S.D. cattle feeder. Says Buckneberg: "These cattle have done better than in other years. Hair coats are slicker and they have a better bloom." Buckneberg credits the better finish to a new feeding program he tried for the first time with this lot. Ration included corn silage, alfalfa hay, shelled corn—plus a supplement containing Terramyin. "What's more," he adds, "since feeding Terramycin I haven't had any cases of lumpy jaw. Always had some before."

ANOTHER FEED MILL BY *Hogenson* . . .

FARMERS' ELEVATOR SERVICE COMPANY

FORT DODGE, IOWA

This all-concrete FELCO push-button feed mill and warehouse at Fort Dodge, Iowa, is managed by Morel Stientjes. The mill features individual scales for each ingredient, conveying equipment direct from packers to truck loading dock or warehouse storage. Bulk carload or truck unloading and bulk finished product loading facilities are included. Let us put our experience in design and construction at your disposal.

SEE YOU AT THE FEED PRODUCTION SCHOOL . . .

and after, let us help incorporate the new methods presented in your present—or new—plant.

Hogenson Construction Co.

722 FLOUR EXCHANGE — MINNEAPOLIS 15, MINN.

Farm and Feed Salt NEWS

FROM INTERNATIONAL SALT COMPANY, INC.

Poultry-feed mixing now simplified

. . . with special trace-mineral salt product

Now, you can add the correct amounts of salt and trace minerals to your poultry feeds—in one simple operation. Sterling Gold Bond Blusalt, a special product of International Salt Company, contains both high-quality salt and the trace minerals essential to good growth and feed efficiency in poultry.

Included in Sterling Gold Bond Blusalt are cobalt, copper, iron, iodine, manganese, zinc and sulfate sulfur—in the now known correct amounts. This special poultry salt contains the additional manganese needed to guard against perosis in chicks. The golden color of this special trace-mineral salt product is popular with feed manufacturers, since it blends well with the other feed ingredients.

For the convenience of feed mixers and manufacturers, International has prepared comprehensive tables showing just how much Sterling Gold Bond Blusalt should be added to every type of poultry feed. At your request, we'll gladly send you these tables, as well as a guaranteed analysis of Gold Bond Blusalt. Simply contact International Salt Company.

Want service with your salt?

You can get it from International's Animal Nutrition Department. Located at Watkins Glen, New York, this department does continuing research into the proper use of salt and trace minerals in modern livestock and poultry feeding programs. It's your department to consult at any time for technical advice on mixing or feed-formula problems, and for information on any of the "Sterling" Salt products. You can also get details on the department's services from any of International's representatives.

SALES OFFICES: Atlanta, Ga.; Chicago, Ill.; New Orleans, La.; Baltimore, Md.; Boston, Mass.; Detroit, Mich.; St. Louis, Mo.; Newark, N. J.; Buffalo, N. Y.; New York, N. Y.; Cincinnati, O.; Cleveland, O.; Philadelphia, Pa.; Pittsburgh, Pa.; Memphis, Tenn.; and Richmond, Va.

WITH LIVESTOCK WINTERING IN THE BARN . . .

Now's the time to sell Sterling Salt Liks!

These 4-lb. Liks of high-quality salt (available plain, iodized, sulfurized or with trace minerals added) are made especially for free-choice feeding *in the barn*. So why not feature Sterling Salt-Liks *now* . . . for extra sales and profits? All your customers can use them!

Sell Salt Lik holders, too. Sterling Salt-Liks fit holders especially developed by International Salt Company for ease of installation and durability. Each holder holds a single Lik and can be fastened to a stanchion or a wall as desired. They are packed 12 to a case.

To help you sell more Sterling products, we're offering colorful "Authorized Dealer" signs . . . ad mats for insertion in local papers over your name . . . and other effective point-of-sale material. Write us direct, or contact the International Salt Company sales office nearest you.

Did you know???

. . . that International Salt Company is promoting a new 3-step program for controlling internal parasites in livestock. Program features Sterling Green'salt: salt plus trace minerals plus 10% phenothiazine. This means more farmers in your area will be hearing about Sterling Green'salt.

. . . that during the winter months, many feed dealers sell Sterling Halite Melting Crystals for removal of ice and snow. This popular, well-advertised product comes in 10-, 25- and 100-lb. bags. Sell Halite yourself for extra winter profits!

STERLING Farm and Feed Salt

INTERNATIONAL SALT CO., INC.
SCRANTON 2, PA.
MEMBER AMERICAN FEED MANUFACTURERS ASSOCIATION

Stop
CONVEYOR BACKLASH
Bushings and special reamers available for all size conveyors
REPAIR ELONGATED COUPLING CONNECTIONS
PATENT PENDING
WITH HERCULES BUSHINGS
NO COSTLY DELAYS FOR REPAIRS
WRITE FOR FULL DETAILS
Don't discard screw conveyors because of worn couplings! HERCULES bushings renew worn-out conveyor connections . . . provide constant snug fit for quiet running and less wear. Bushings . . . not the bolt . . . transmit the power, with greatly increased torque. Easily assembled without tearing down conveyor system.
ENDS BOLT FAILURE FOREVER!
SIOUX PRODUCTS COMPANY
BOX 143 SIOUX CITY, IOWA

three types of commercially prepared lactose differing only in the degree of fineness made comparable gains to each other.

Spray-dried whey products containing lactose at different levels were used and compared with roller-dried whey. The pigs receiving spray-dried, delactosed whey gave the poorest performance with the remaining whey rations giving a similar performance to each other. As was expected, pigs receiving the dried skimmilk ration exceeded the pigs fed the other four treatments in total gain and feed required per pound of gain.

In a study of performance on a grower ration after being on respective starter rations, it was found that the pigs continued to maintain their initial advantage in respect to gains. This study included the period from five to nine weeks of age. It is felt that more research is needed before it can be determined if this same trend would continue until pigs are of marketable weight.

A. H. Myers, a commercial hog producer from Kansas City, told the persons attending that hog producers selecting breeding stock should give top consideration to feed efficiency.

"If you have healthy stock, the most important factor is how much it costs to produce a pound of pork," Mr. Myers said. "Fortunately we have found that the meat-type hog combines good carcass with feed efficiency and gain ability."

Since feed efficiency is one of several important factors, it follows that "it will be increasingly difficult to sell swine breeding stock without performance records," according to Dr. Lavon Sumption, animal husbandman at the University of Nebraska.

Calling the production of purebred seed stock a "specialized business," he said the profits will go to the constructive breeder who demonstrates a sincere interest in improving the economic health of the swine industry.

Records Needed

The records needed, he said, are individual identification, number of live pigs per litter, number weaned per litter, weaning weight, five-month weight, and backfat measurements at or near 200 lb.

Dr. Sumption also reviewed research at the college involving "disease-free" pigs to determine the effectiveness of selection for performance under different systems of breeding.

Dr. Ralph Durham, Iowa State College, reported that a boar testing station has been established in Iowa, and that tests conducted at the station permit setting a selection index on each boar based on rate of gain, efficiency and backfat of the offspring.

The outlook for the hog producer during the coming year was presented by Ralph Henderson, extension economist at the University of Nebraska. There will be about a 4-5% increase in the pig crop this fall and approximately a 10% increase in the pig crop next spring. These increases will be reflected in hog marketings during 1958, he said.

Continuing Support

WINNIPEG—Canada's turkey producers were assured by Douglas S. Harkness, federal minister of agriculture, that their industry would not be disrupted by termination of price supports and import controls. The government promise was given to a joint delegation from the Canadian Federation of Agriculture and the Canadian Turkey Federation.

HOLDS OFFICIAL OPENING

DES ARC, ARK.—The Des Arc Feed & Grain Co. had its official opening recently as a "new business to furnish a market to farmers for their oats, milo, soybeans, wheat and other grains." Claud C. Purvis will be manager.

You Sell The Best When You Sell GRAN-I-GRIT

THE GRIT WITH THE SHARPEST GRINDING EDGES EVER CUT

You are insuring your Future Profits when you sell GRAN-I-GRIT . . . the BEST Poultry Grit . . . because GRAN-I-GRIT will repeat in ever increasing volume for you.

That's WHY Dealers and Jobbers have become so enthusiastic about selling GRAN-I-GRIT.

GRAN-I-GRIT Research Has Proven that the Feeding of Larger Sizes of Grit Will Increase Profits

GRAN-I-GRIT research and results obtained by poultry raisers prove that the larger sizes of GRAN-I-GRIT not only grind feed more efficiently but also keep the digestive tract open for full feed utilization by grinding up feathers and fibrous litter that all poultry eat.

Small grit passing through the digestive tract, rather than staying in and working in the gizzard, takes space needed for feed.

Full Details on Gran-I-Grit's New Feeding Program

There is a new GRAN-I-GRIT circular that explains in detail this new GRAN-I-GRIT feeding method that makes more money for broiler growers and egg producers. You, as a poultry grit dealer or jobber, should write for a free copy today.

Sharper Grinding Edges Release More Nutrients From Your Feed

Those EXTRA valuable body building nutrients that GRAN-I-GRIT gives you by finer grinding of your feed are a great aid in speeding growth, body development and weight gains of broilers, and in getting more eggs for each pound of feed consumed. GRAN-I-GRIT will not dissolve and does not change the mineral balance of your feed.

GRAN-I-GRIT is packed in 10 lb. and King Size (App. 22 lbs.) Feeder Packs and 25, 50 and 80 lb. bags.

It's a Fact . . . GRAN-I-GRIT Has *Eye Appeal* for Poultry of All Ages

Poultry must consume the proper amount of grit to get maximum results from feed and GRIT MUST HAVE EYE APPEAL before poultry will eat it.

Side by side tests have proven that chickens and turkeys of all ages prefer a light gray grit with black specks . . . THE GRAN-I-GRIT TYPE . . . as much as 10, 15 and even 100 to one over grit of other colors.

When poultry raisers know this fact they insist on GRAN-I-GRIT.

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DEHYDRATED ALFALFA MEAL
Animal Fat Treated
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Suncured Alfalfa—20% Cane Molasses
ALFA—CANE
Dehydrated Alfalfa - Animal Fat - Cane Molasses
ROHLOFF BROS., INC.
RFD GRAYTOWN, OHIO

IT'S ECONOMY WISE TO JERSEEIZE WITH JERSEE
VITA-MIN a Pre-Mix
VITAMINS MINERALS
Made by the builders of VITAMINIZED and MINERALIZED CONCENTRATES since 1912.
Jobbers and Warehouses From Coast to Coast
THE JERSEE CO.
WRITE TODAY FOR DEALERS SALES HELPS!

Ray Gould

ADVERTISING MANAGER — Ray Gould has been named advertising manager for Dannen Mills, Inc., St. Joseph, Mo. Mr. Gould, who has been associated with the Ad-Art Printing Co., Kansas City, is a graduate of the University of Kansas City. He succeeds Robert Snyder, who has joined an advertising agency in West Miami Beach, Fla.

Feed Firm Burns; $500,000 Damages

AMITE, LA.—Damages estimated at $500,000 were caused by fire recently at the Cefalu Livestock Feed Co. here. The fire was discovered at a feed mill and warehouse where it raged out of control for nearly 12 hours.

Nick Cefalu, owner of the firm, said he suspects that the fire was started by either a passing train or spontaneous combustion. The blaze apparently smoldered for some time before it was discovered.

The disaster is the second to strike the Cefalu firm recently. A feed storage warehouse and main office building collapsed under a deluge of rain about three months ago. Damage then was estimated at $35,000.

JOHN BURNETT DIES

DALLAS CENTER, IOWA — John H. Burnett, 74, manager of the Dallas Center Grain & Coal Co. from 1912 until his retirement 10 years ago, died of a heart ailment recently. Since retirement, he has been associated with the Brenton State Bank and the Burnett Motor Co., operated by his son. Surviving are his widow, two sons and two grandchildren.

Backed by 35,000,000 ads

this year alone!

Rats and Mice are Expensive Boarders!
EACH RAT COSTS YOU $20 A YEAR
KILL 'EM WITH warfarin
Warfarin baits kill off whole colonies of rats and mice in 5 to 14 days. No bait shyness, pre-baiting is never necessary. For proven results, look for warfarin on the label of the next baits you buy.
WISCONSIN ALUMNI RESEARCH FOUNDATION
BUY BAITS MADE WITH warfarin— WORLD'S GREATEST RAT AND MOUSE KILLER

the magic name that sells RAT and MOUSE BAITS

BE SURE THE LABEL ON BAIT YOU STOCK SAYS "warfarin"

BREEDING ADVANCE

Prize Ewe Produces 11 Lambs in Year Via Ova Implants

LONDON—Eleven lambs from one mother have been bred in one season at Britain's Agricultural Research Farm at Cambridge, England.

The experiment which brought about the super family is part of work begun some years ago by Dr. John Hammond to devise a method by which breeders could quickly improve their stock.

To achieve the super production, a prize Suffolk sheep was injected with sex hormones which caused her to set free a larger number of reproduction egg cells than is normal in a sheep. She was then mated with a prize ram.

The egg cells were removed from her body and transplanted into ewes of poorer breeding quality. These served as incubators for the fertilized ova, and eventually they gave birth to 10 lambs which were actually the offspring of the prize ram and the original ewe which provided the egg cells.

The ewe herself was mated again with the ram after removal of the egg cells, and she reproduced a single lamb, making 11 lambs by the one mother in one season. Geneticists believe that a larger number of eggs could be transplanted and that the same method could be used for cattle.

Mill Foreman Dies When Buried in Grain

COUNCIL BLUFFS, IOWA — A mill employee was suffocated at the E. M. Peet Manufacturing Co. here recently when he was buried in three feet of hominy.

Herman Claussen, 54, mill foreman, apparently had crawled into a clogged grain chute when the grain suddenly cascaded down from the hopper above, according to police. They said his partially covered body was discovered by a fellow workman.

Mr. Claussen had been an employee of the firm for 18 years.

J. H. JENKINS DIES

ADVANCE, MO.—J. H. Jenkins, owner of the Stoddard County Grain Co., died recently at his home. He was 79. Surviving are his widow and six children.

A New Service for the Mid-South

Pless & Sheahan Now Offer You from Memphis . . .

FOUR MAJOR ADDITIVES

1 PIGMENTATER—Gallicol Carotinoid Pigmentation Concentrate contributes deep yellow color to broilers. Product of Gallicol Corp., Lynbrook, L.I., New York.

2 METHIONINE—Both DL-Methionine and Methionine Hydroxy Analogue Calcium as produced by the pioneer manufacturer, the Du Pont Co., Wilmington, Del. Your feed protein is no better than its scarcest amino acid—Methionine.

3 VITAMIN K—Make sure your broiler feeds have adequate protection against hemorrhagic disease caused by Vitamin K Deficiency. Hetrogen K produced by the Heterochemical Corporation, Valley Stream, L.I., New York, gives you this protection.

4 ARSANILIC ACID—Give your broiler and swine feeds the extra growth stimulant of arsanilic factors. Pendergrast Chemical Co., Atlanta, Ga., produces our 20%, 40% and 80% arsanilic acid.

Use Handy Coupon

OR CALL JACKSON 6-6411

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P.O. Box 2654, Memphis, Tenn.

Please send me full facts about your

☐ Pigmentater ☐ Vitamin K
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☆ Classified Ads ☆

Classified advertisements received by Tuesday each week will be inserted for the issue of the following Saturday. Rates: 15¢ per word; minimum charge $2.25. Situations wanted, 10¢ a word; $1.50 minimum. Count six words of signature, whether for direct reply or keyed care this office. If advertisement is keyed, care of this office, 20¢ per insertion additional charged for forwarding replies. Commercial advertising not accepted in classified advertising department. Advertisements of new machinery, products and services accepted for insertion at minimum rate of $9.50 per column inch. All Want Ads cash with order.

MACHINERY FOR SALE

WHIRLAWAY AIRBLAST CAR LOADERS, cast iron pulleys, new and used feed and elevator equipment. Hagan Mill Machinery, P. O. Box 574, Jefferson City, Mo.

FEED MIXER, 1-TON CAPACITY, GUARANTEED first-class throughout, 5 H.P. motor drive. Address Ad No. 3774, Feedstuffs, Minneapolis 1, Minn.

FOR SALE—ENCLOSED MOTORS, RICHARDSON scales, truck scales, hammermills, oat crimpers, horizontal and upright feed mixers, sewing machines, elevator legs, screw conveyors, molasses mixers and pellet mills. J. E. Hagan Mill Machinery, Box 574, Jefferson City, Mo.

SEVEN BARGAINS
Used Feed Mill Equipment

1—Automatic Exact Weight scales—5/100 lb. bags per minute. Good condition ..... $ 550.00

2—100 H.P. 20" Patent Crusher Williams Hammer Mill, 100 H.P. motor, no fan. Fair condition.
Mill 150.00
Motor 350.00

3—100 H.P. Jay Bee Hammer Mill complete with motor, starter, controls, two (2) ground grain bins (steel) 24,000-lb. capacity, each with Cyclone. Good condition 3,250.00

4—Two No. 2A Eureka Cereal Cutters with motors, extra cutting knives. Fair condition. Each... 550.00

5—Four Buffalo Molasses Meters. Good condition. Each 85.00
Two Buffalo Meters, calibrated for fats (like new). Good condition. Each 125.00

6—Richardson Automatic Scale, 100 lb. weighings. Fair condition... 350.00

7—Four Wenger Metering Pumps with gear head motors, direct connected on base (for fats). Good condition. Each 485.00

UNCLE JOHNNY MILLS
P.O. Box 236, Phone FAirfax 3-3181
HOUSTON, TEXAS

MACHINERY FOR SALE

ONE ½-TON BROWER MIXER; ONE standard Triumph Corn Sheller; one 16" Blue Streak Mill. Sarrington Milling Co., Lake Delton, Wis.

PAK-MASTER SELF UNLOADING FEED body, 14' combination bag or bulk. Excellent condition. See it at Lloyd Ozmun, Winona, Minn., or write or call Snyder-Meylor Co., Sheldon, Iowa.

FISCHBEIN PORTABLE BAG CLOSER, complete with one hundred 4-oz. cones thread, and one quart lubricating oil. Palmetto Supply Co., 700 Piume Street, Spartanburg, S. C.

MOLASSES FEED MIXER, GUMP ROTARY Sifter, 41 ft. Cleat Conveyor, snappy shaker, fat conditioning tank, gates, two-way valves, cups, etc. Zip Feed Mills, Sioux Falls, S. D.

FOR SALE—HOWE 200,000 LB. CAPACITY railroad scale with ticket punch beam, like new. Reasonably priced. J. A. McCarty Seed Co., 526 N.W. Fourth St., Evansville 8, Ind.

TWO MODEL 46 SPROUT-WALDRON SIMplex Pellet Mills. Good condition. 50 H.P. and 60 H.P., 25 cycle motors available. Coop. G. L. F. Exchange, Inc., P.O. Box 973, Buffalo 5, N. Y.

ONE HART CARTER ASPIRATOR, STYLE P.W. One 3 H.P. Howell motor. Two Vibrox Packers, ⅞" pitch, made by Gump Co. Two Nordyke & Marmon Roller Mills, 10/30 double stands. Fairbanks-Morse motor 220/440, 1,170 R.P.M., 20 H.P., complete with V belts and pulleys. Contact Land O'Lakes Creameries, Inc., 2215 Kennedy Street N.E., Minneapolis 13, Minn.

JACOBSON MASTER MILL MODEL 412, serial No. 2189 with 75 H.P. Allis-Chalmers 3,600 R.P.M., 220/440 volt open motor and manual hand starting compensator, on base. Has ammeter and 20 H.P. TEFC General Electric motor on fan drive with magnetic starter. Also Nickle double roll crusher feeder with 7½ H.P. TEFC motor and magnetic starter. Bargain. Good condition. Has been in service only few years. Will make good set-up for someone. Immediate delivery. Write or phone G. E. Wadington, 2300 Fourth Ave. S. E., Cedar Rapids, Iowa.

MACHINERY FOR SALE

SLIGHTLY USED TEXAS CYCLONE MOlasses Mixer. Wenger Mixer Manufacturing Co., Sabetha, Kansas.

BAIRD DRYERS 4x30; HEIL DRYERS 5'x24'; Rotary Dryers 3'x24', 4'6"x40', 6'x60'. Dewatering Presses, Louisville 8-Roll 36"; Davenport 1A, 2A; Aluminum Tank, 24,500 gal. Ribbon Mixers 336 cu. ft., also Steam Tube Dryers, Attrition Mill, Conveyor. Ferry Equipment Corp., 1403 N. 6th St., Philadelphia 22, Pa.

BLUE STREAK NO. 5A MILL WITH crusher feeder attached, dust collector, piping, elbow, screens, 50 H.P. motor and starter. Good condition. Priced to move. Also have Blue Streak No. 40 Mill, collector, piping, elbow. Nearly new. Either mill will make it possible to start a feed grinding service economically or replace old equipment without high start up for machinery. Write or phone Wadington Feed Mill Supplies, 2300 Fourth Ave. S. E., Cedar Rapids, Iowa.

NEW MOTORS
OF AMERICAN MANUFACTURE

BEAT THESE PRICES
IF YOU CAN—
WITH FREIGHT ALLOWED
TO YOUR PLANT

OPEN TYPE MOTORS
220/440 Volt, 60-Cycle, 3-Phase

H.P.	1800 R.P.M	1200 R.P.M.
1	$ 65.00	$ 76.00
2	$ 88.00	$ 98.00
3	$ 98.00	$117.00
5	$117.00	.....

TOTALLY ENCLOSED MOTORS
220/440 Volt, 60-Cycle, 3-Phase

H.P.	1800 R.P.M	1200 R.P.M.
1	$ 83.00	$ 95.00
2	$117.00	$127.00
3	$136.00	$155.00
5	$155.00	.....

If these prices are too high, consider the rebuilt and guaranteed motors at the following prices—

OPEN TYPE MOTORS
220/440 Volt, 60-Cycle, 3-Phase

H.P.	1800 R.P.M	1200 R.P.M.
1	$ 49.00	$58.00
2	$67.00	$75.00
3	$75.00	$89.00
5	$89.00	.....

TOTALLY ENCLOSED MOTORS

H.P.	1800 R.P.M	1200 R.P.M.
1	$ 54.00	$ 64.00
2	$ 85.00	$ 98.00
3	$104.00	$125.00
5	$125.00	.....

Above Rebuilt With New Motor Guarantee
NEMA Frames — Ball Bearing

LOOK AT THESE PRICES
USED AND REBUILT HAMMERMILLS

No. 182 Bauer, 15", Used	$100.00
No. 182 Bauer, 15", Rebuilt	$550.00
Kelly Duplex, 15", Used	$ 75.00
Kelly Duplex, 15", Rebuilt	$425.00
No. 416 Bauer, 12", Quick Change Screens, Used	$450.00
No. 416 Bauer, 12", Quick Change Screens, Rebuilt	$850.00
Papec, 16", Used	$ 75.00
Bluestreak, Size 30, Used	$100.00
Bluestreak, Size 30, Rebuilt	$550.00

Used and Rebuilt Motors and Hammermills, F.o.b. Lima, Ohio
All Prices Subject to Change Without Notice
Merchandise Subject to Prior Sale
Write or Phone CA 2-4010 Today!

THE LIMA ARMATURE WORKS, INC.
130 EAST PEARL ST. LIMA, OHIO
"Over 30 Years of Continuous Service to Industry"

MACHINERY WANTED

ALL KINDS OF GOOD USED GRAIN processing machinery. E. H. Beer & Co., Inc., Baltimore 2, Md.

WANTED TO BUY — PELLETING MAchine and equipment necessary to make homogenized meal. Address Ad No. 3238, Feedstuffs, Minneapolis 1, Minn.

WANTED TO BUY — RICHARDSON scales, bag closing machines and other good mill, feed and elevator equipment. J. E. Hagan Mill Machinery, Jefferson City, Mo.

SITUATIONS WANTED

EXPERIENCED PRODUCTION MANAGER or feed mill superintendent desires to relocate in the South. Presently employed by large feed mill in East. 450 tons per day capacity. Age 47 years, can design and layout feed mill machinery installations, can supervise all plant maintenance work. Best references. Address Ad No. 3254, Feedstuffs, Minneapolis 1, Minn.

SITUATIONS WANTED

DESIRE A PERMANENT POSITION SELLing protein ingredients for feed jobber or broker. Over nine years' feed selling experience including seven years with Swift & Co. selling protein ingredients, feeds, mineral. Age 36, Married and one child. Willing to relocate. Presently employed. Address Ad No. 3227, Feedstuffs, Minneapolis 1, Minn.

HELP WANTED

SELL PHENOPELS—FAST SELLING CATtle and sheep self wormer pellets. High profit, big demand, repeats. Write Dr. Heinz Co., Inc., Washington C. H., Ohio.

WANTED—SALES MANAGER FOR GROWing feed manufacturer located in Midwest. Qualified man. Salary open. Address Ad No. 3236, Feedstuffs, Minneapolis 1, Minn.

OPERATOR EXPERIENCED IN SOLVENT soybean processing. Plant superintendent experience desirable. Midwest location. Address Ad No. 3228, Feedstuffs, Minneapolis 1, Minn.

WANTED—ASSISTANT SALES MANAGER. Good opportunity for man interested in growing with expanding feed manufacturer. Address Ad No. 3237, Feedstuffs, Minneapolis 1, Minn.

EXCELLENT SIDELINE ITEM FOR salesmen selling to feed, grain, farm equipment dealers and farmers. Liberal commissions. Replies will be held confidential. Write Doane Agricultural Service, Inc., St. Louis 3, Mo.

WANTED — SALESMAN TO WORK IN central New Jersey for well known and reputable feed manufacturer. Feed sales experience necessary. Send full particulars in first letter. Address Ad No. 3234, Feedstuffs, Minneapolis 1, Minn.

SALESMEN WANTED FOR ANIMAL health products. Side line or part time preferred. Complete lines available for every need. Liberal commissions paid. Address Ad No. 3247, Feedstuffs, Minneapolis 1, Minn.

FEED SALESMAN—EXPERIENCED FEED salesman to travel south Mississippi and Alabama. Opportunity for connection with one of the South's leading feed mills. Send complete details of experience, references, etc. Address Ad No. 3202, Feedstuffs, Minneapolis 1, Minn.

NEED RESEARCH MAN WITH ADvanced degree in animal or poultry nutrition in training program on research farm of large milling company. Good opportunity for advancement. Send full information. Address Ad No. 3255, Feedstuffs, Minneapolis 1, Minn.

EXPERIENCED FEED SALES MANAGER. Age 30-45. Must have nutritional background and formulation experience. Willing to travel 50% of time to supervise salesmen and also service large accounts using our premix products. Headquarters Midwest. Excellent opportunity for advancement. Send full information including snapshop. Address Ad No. 3242, Feedstuffs, Minneapolis 1, Minn.

SALES REPRESENTATIVES
DIRECT MILL CONNECTION

with one of the Largest and Best known Baler Twine Manufacturers in Mexico. No one can undersell our representatives—Protected Territories—Unique arrangement. Address Ad No. 3225, Feedstuffs, Minneapolis 1, Minn.

COUNTRY ELEVATOR WANTS SUPERINTENDENT

Indiana location south of Highway 40. At present we handle only grain but our plans include the immediate installation of modern, high speed, custom grinding and mixing equipment along with handling a name brand of feed.

The man we seek must be very aggressive and yet tactful and diplomatic. Must have the ability to acquire the customers' goodwill and the respect of the employees that work for him.

The emphasis in this job is to handle our grain and feed operation through his ability to train and direct other employees.

This job requires a good housekeeping and preventive maintenance program to be set up.

Must be a driver, a real go-getter.

Paid vacation, hospital and life insurance. Age range 28-38. Starting salary $100 per week. Write Dale K. Sparks, Vallonia Grain Co., Vallonia, Indiana, giving qualifications and reference, no reference will be contacted without your permission, week-end interviews will be arranged.

FOR SALE
At Give Away Prices

Dry Material Handling Machinery and Equipment

4 Sutorbilt Blowers, 18" x 30", equipped with 8" suction lines, 150 HP drive.

Conveyors of all types—over 2000 ft.—Belt, Redler, Drag & Vertical Bucket

plus

1000 ft. of 6-12" screw conveyor

●

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HIGH-FAT PELLET

(Continued from page 16)

ficiently. It is our feeling that if we use these good hard pellets as the starting place and develop inexpensive units which will meter the pellets, meter the fat and apply the fat so as to permit maximum absorption by the pellets, equipment costs will be at a minimum, and there will be less danger of producing inferior pellets.

Within a very short time, we expect to install such equipment under experimental conditions so that it will take a varying stream of pellets directly from the end of the scalping shoe. We intend to control this stream by weight, and to control as well the percentage of fat added to the finished pellet. The system will be designed specifically to add fats to firm, hard pellets. It is our feeling that the amount of fat which can be added will depend to a great extent upon the quality of the pellet, but our tests to date indicate that standard pellets currently being made have very good absorbing capacity, and there is every indication that fat levels up to 10% and higher can be reached without difficulty.

Furthermore, addition of the fat to the finished product permits greater flexibility in the choice of the type of fat which can be used. Present indications are that adding fat to mash limits the user to tallow or mixtures of tallow and vegetable fat. By adding fat to the finished pellet, the feed manufacturer may take advantage of the market availability and the fluctuating price of different fats.

In summation, it is our feeling that since the predominate research indicates the value of higher fat content, the trend is sure to continue, limited only by the ability to produce good pellets with a high fat content.

Of the various approaches, which include equipment design changes, pre-cooking, fine pre-grinding, the use of additives and the addition of fat to the finished pellet, it is difficult to say which will eventually emerge as predominant. It certainly seems that for the immediate future, the method of adding the fat to the finished pellet holds the best promise, since it involves the feed mill in the least amount of additional equipment, and permits it to get into operation in the minimum time. It is perfectly possible, of course, that a few of these approaches will end up being used in combination and, in our research, we intend to investigate the effects of both pre-cooking and pre-grinding on the ability to add fat to the finished pellet.

Broiler Men Compete In West Virginia

MORGANTOWN, W.VA. — Broiler growers in West Virginia are keeping a close eye on efficient production techniques through monthly comparisons of their records. Both "pro-league" and "semi-pro league" flocks are eligible for a monthly honor roll or honorable mention list.

In announcing the September results, Ted R. Hash, extension poultryman at West Virginia University, defined "pro-league" growers as those with more than 5,000-bird capacity, while the "semi-pro leaguers" are those with less than 5,000-bird capacity.

Production averages for the month: In the "pro-league," flock size averaged 7,357 birds, with an average weight of 3.57 lb. Feed conversion ratio was 2.43 lb. of feed per pound of bird; livability was 99.34% and the production efficiency index was 1.469.

The "semi-pro league" record showed an average flock size of 2,989 birds, with an average weight of 3.63 lb. Feed conversion ratio was 2.44 lb.; livability was 98.79% and the production efficiency index was 1.489.

Of the 39 records turned in by growers from 10 counties, five pro leaguers and five semi-pros were named to the monthly honor roll. Five from each league also were named to the honorable mention list, which is exclusively for feed conversion excellence. The 39 growers had a total of 176,200 broilers on their reports.

To Seek Legislation For Shift to Cwt.

LOUISVILLE, KY. — Ben Butler, Kentucky Commissioner of Agriculture, said recently he will seek legislation to switch to the "badly needed" hundredweight system of measuring grain when the present bushel measure is generally abandoned.

He made the comment when speaking before the convention of the Southern Weights & Measures Assn. here. He said Kentucky has made great progress in the past two years in improving the accuracy of meters, scales, feed and fertilizer measurements and packaged commodities labeling.

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International Salt Co. Chicago Manager Dies

CHICAGO—Sven A. Nystrom, 49, manager of the Chicago district office of the International Salt Co., died recently. He had served 23 years with the company.

He graduated from Northwestern University as an engineer in 1932 and two years later joined the International Salt Co.'s Boston office. In 1941 he went to the firm's New Orleans office as a sales engineer, and after a term of service in the Navy he worked in the Minneapolis sales territory from 1946 to 1953.

In January, 1953, he was appointed industrial sales manager for International's new Midwest division and in November, 1953, was appointed Chicago district manager.

Surviving are his widow and two children.

ADDS MOBILE UNIT

ST. JAMES, MINN.—Farm Bureau Service of St. James has added a mobile feed manufacturing unit.

New Advertising Firm Opens Chicago Offices

CHICAGO — Richard Crabb, formerly senior member of the agricultural division of the E. H. Brown Advertising Agency in Chicago, has opened a new firm on the fourteenth flour of the Civic Opera Building, 20 N. Wacker Drive, Chicago.

The new agency, Richard Crabb Associates, will specialize in agricultural communications. Operations will be national in scope, according to an announcement from the firm. Accounts to be serviced will represent several major industries serving the farmer, including farm fertilizer, chemicals, seeds and allied products.

Mr. Crabb, author of "The Hybrid Corn Makers" and numerous articles, has three other members of the E. H. Brown staff with him. In addition, a number of other persons experienced in the communications field are slated to join the agency in the near future.

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(RUMEN) (UNIVERSALLY ACCEPTED) (FEED) (INOCULENT) (SUPPLEMENT)

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RUFIS is a NEW patented process! It has been thoroughly tested by leading Colleges and Feeders throughout the United States under all types of feeding conditions.

RUFIS can be fed with any supplement. Tests have shown savings of 3 to 3½¢ per pound to cost of gain. It is easy to mix. Cost is low. PLAN NOW to add RUFIS to your FORMULA FEEDS. Step up the conversion factor. Give your customers the EXTRA FEEDING RESULTS that mean EXTRA TONNAGE for you.

When RUFIS is added to the ration of cattle and sheep results show increased assimilation in high roughage rations, better health, more rapid growth . . . and increased gain.

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Tom G. Dyer H. C. Ness

Tom G. Dyer Named Supersweet Products Development Director

DES MOINES, IOWA — Tom G. Dyer, Des Moines area sales manager for Supersweet Feeds, has been named to direct a newly formed products development department of the firm. He will continue to make his headquarters in Supersweet's area office in Des Moines.

Mr. Dyer attended Capital City Commercial College, Des Moines, and was hired by Sargent & Co. in 1954. He became sales manager of the Des Moines area when the Supersweet division of International Milling Co. purchased Sargent in August, 1956.

Replacing Mr. Dyer as Des Moines area sales manager is Howard C. Ness who has been assistant sales manager at Des Moines. He is a graduate of Ohio State University and is a former district sales manager for the J. C. Watkins Co., Winona, Minn.

Commercial Solvents Receives Patent for Zinc Bacitracin

NEW YORK—Zinc bacitracin, an antibiotic for the animal feeds industry, has been patented by the Commercial Solvents Corp. The new product, for which Patent No. 2,809,892 has been issued, is described by the company as being able to retain its potency over long periods of storage despite adverse conditions of heat and moisture.

Dr. F. W. Chornock headed the Commercial Solvents' research group which developed the product. A number of perplexing problems were solved during the three-year period of zinc bacitracin's development, Dr. Chornock said. More than $250,000 was invested before the antibiotic, which is a polypeptide closely akin to a protein, was successfully united with the salt of a suitable heavy metal. The union of bacitracin with compounds of a number of heavy metals was achieved in the course of the research, Dr. Chornock stated, with the zinc salt combination proving to best serve the needs of the animal feeds trade.

The necessity for a feed supplement with high stability level results from the tendency of all antibiotics, as biologicals, to lose potency while awaiting use, particularly under such conditions as those present in the pelleting of feeds. Since animal feeds in general contain at least 10% of their weight in moisture, or 200 lb. of water per ton, antibiotics used in feed supplements frequently have deteriorated beyond the point where they were effective as health and growth factors, company officials said.

Zinc bacitracin is marketed by the CSC's Animal Nutrition Department under the company's trade name, Baciferm(R).

The company has announced that Baciferm containing zinc bacitracin will be marketed in six potencies ranging from five to 25 grams per pound. Three of the formulations are offered in combination with penicillin.

MILLFEED FUTURES

(Continued from page 1)

tors that could be said to have contributed to the downfall of futures trading, two influences that proved particularly crippling were the increase in bulk handling of millfeeds at the expense of sacked feed and the postwar decline in forward buying and selling of this commodity.

Bulk Problem

The bulk handling development was an obvious threat, and in an effort to meet it, trading in bulk middlings was started in 1955. One of the problems arising from bulk handling was the lack of public terminal facilities at Kansas City for the storage of bulk feeds. This made it difficult for many traders to take delivery and militated against the market.

It might have been possible to overcome this handicap in various ways, but by 1955 so many other factors were bearing down on the market that bulk storage would not have changed the picture greatly. Bulk handling too seemed to accelerate a trend toward direct trading between flour and feed mills on price-date-of-shipment contracts.

One of the severe blows suffered by the market after the war occurred when heavy government holdings of wheat depressed futures to a point where flour buyers turned to price-date-of-shipment buying for long periods at a time. This confined flour mills almost entirely to spot sales of millfeed and eliminated the need and even the habit of hedging feed. When forward purchasing of flour came into vogue again in the past few years millfeed prices looked low to millers and a majority decided to stick to selling millfeed as it was produced.

Other factors which hurt the market in a minor way were increased trucking of feed, which enlarged mill door sales in the area tributary to Kansas City and reduced carlot shipments; a great decline in the number of flour mills, and changes in feed formulation which eliminated millfeeds from some low fiber, high carbohydrate rations that became standard in the poultry industry.

Can Be Reopened

Trading in millfeeds futures at Kansas City has been suspended, but the market could be reopened at any time that new conditions would justify.

The first trade in millfeed futures at Kansas City was made in 1931 between Thad Hoffmann, then president of the Kansas Flour Mills Co., Kansas City, a unit of Flour Mills of America, and Jerry Parks, representing the then Russell Grain Co.

Records of early day trading are not available and the price of the transaction is not known, but bran sold in midyear 1931 at $9 a ton and shorts at $14. Volume figures likewise are lacking for the early years. The first yearly total showings are for 1933 when 202,925 tons were traded.

The all-time high in bran futures was set Jan. 7, 1948, when the January future sold for $86.10 ton, and the all-time low naturally occurred in December, 1932, when the December future hit $5.85. The top on shorts was $88.50 on Jan. 3, 1948, and the low of $6.95 was hit by the January future on Dec. 29, 1932. The peak of open interest was 43,290 tons on Oct. 1, 1937.

Besides Kansas City, millfeed futures also were traded in St. Louis for several years beginning in 1929, and volume rose to a point of around 50,000 tons at the peak. Later, activity dwindled at that market and trading was suspended in World War II and was not reopened.

USDA Report of Crop Production, Nov. 1

The Crop Reporting Board of the Agricultural Marketing Service makes the following report for the U.S. from data furnished by crop correspondents, field statisticians and cooperating state agencies:

Crop:	Yield per acre Average 1946-55	Yield per acre 1956	Yield per acre Prelim. 1957*	Production (in thousands) Average 1946-55	Production (in thousands) 1956	Production (in thousands) Prelim. 1957*
Corn, all, bu.	37.8	45.4	46.1	3,120,484	3,451,292	3,332,535
Wheat, all, bu.	17.4	20.0	21.5	1,131,000	997,207	927,324
Winter, bu.	18.6	20.6	22.2	862,471	734,995	690,601
All spring, bu.	14.3	18.5	19.6	268,529	262,212	236,723
Durum, bu.	11.7	16.6	17.3	29,637	39,607	40,810
Other spring, bu.	14.6	18.9	20.2	238,892	222,605	195,913
Oats, bu.	34.3	34.3	37.4	1,325,418	1,152,652	1,337,790
Barley, bu.	26.8	29.0	28.8	291,589	372,495	430,737
Rye, bu.	12.7	13.2	15.4	22,092	21,558	26,440
Flaxseed, bu.	9.0	8.8	5.1	38,627	48,712	27,060
Sorghum grain, bu.	19.0	21.9	29.2	155,980	205,065	526,528
Rice, 100-lb. bag	†2,355	†3,030	†3,177	45,279	47,402	42,877
Cotton, bale	†300	†409	†413	13,669	13,310	11,788
Hay, all, ton	1.40	1.48	1.65	104,178	108,708	121,238
Hay, wild, ton	.81	.73	.94	11,367	8,671	11,527
Hay, alfalfa, ton	2.17	2.08	2.28	43,854	61,127	69,393
Hay, clover and timothy,‡ ton	1.41	1.42	1.49	28,435	21,107	21,302
Hay, lespedeza, ton	1.04	1.06	1.10	6,043	4,188	4,424
Soybeans for beans, bu.	20.2	21.8	22.7	271,689	455,869	491,421
Peanuts,¶ lb.	818	1,157	979	1,760,097	1,602,260	1,503,925
Pasture, %	**71	**58	**82	.....	.....	.....

*Estimates for wheat, oats, barley, rye, flaxseed, hay are not based on current indications, but brought forward from previous reports. †Pounds. ‡Excludes sweet clover and lespedeza hay. ¶Picked and threshed. **Condition Nov. 1.

FEED SUPPLIES

(Continued from page 1)

average yield of 46.1 bushels per acre is slightly above last year's record, and it accounts for the good production in the face of lower acreage. In the corn belt, production is just slightly below last year, but much of the corn was still waiting to be picked.

In the north Atlantic area, harvest is well advanced with fair to good yields in the north. In the mid-Atlantic states, yields are far below average because of the drouth. Further south, the yield prospect is second only to 1955. In Gulf states, harvest is well advanced with excellent yields, and in western states yield is at a new high in some states and near a record in others.

SOYBEANS: Indications Nov. 1 point to a record crop of 491 million bushels, 8% higher than 1956 and 81% over the 10-year average. The bumper production is the result of the highest acreage of record with record yields. The indicated yield of 22.7 bu. per acre compares with the previous record of 22.3 bu. in 1949. By Nov. 1, harvest was nearing completion in most areas, but much remained in the major states of Minnesota and Iowa and in the south Atlantic and south central states.

SORGHUM GRAINS: The Nov. 1 forecast of 527 million bushels compares with the Oct. 1 forecast of 514 million bushels, and the 1956 crop of 205 million. Following a late start, the record acreage had a favorable season for growth and nearly all of the crop was mature when widespread killing frosts occurred. While three-fourths of the crop is usually harvested by Nov. 1, this year only one-fourth is harvested.

PASTURES: Condition of pastures Nov. 1 was considerably above Nov. 1 last year in all regions of the country but mid-Atlantic states. (See maps on page ??.)

C. O. Bartlett & Snow Patent Granted

CLEVELAND—The C. O. Bartlett & Snow Co. has announced that a patent has been granted on the company's basic shelling unit that is used in the Triumph No. 1200 corn shelling system.

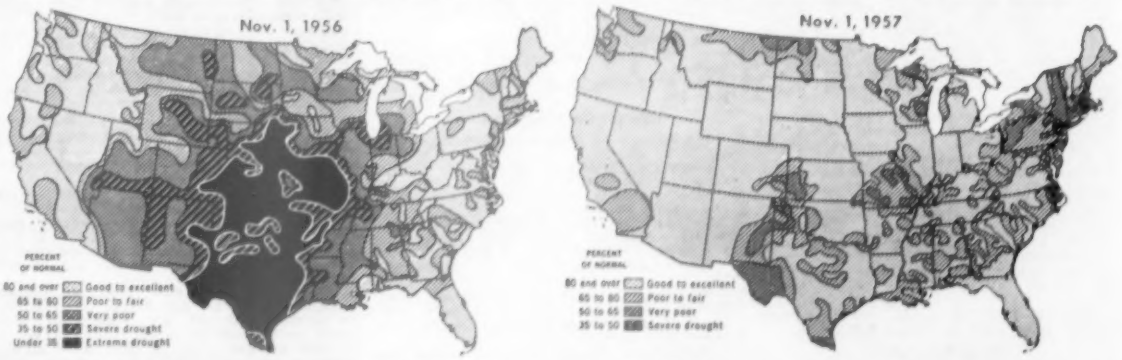
E. P. McCreery, manager of the Triumph Division, says that all 18 claims were allowed—giving full coverage of the shelling and separating principles developed by the company for commercial shelling plants.

The sheller was introduced in 1953.

NEW MANUFACTURING PLANT

IDAHO FALLS, IDAHO — A feed manufacturing plant owned and operated by the Jack Thomas Grain & Livestock Co., has opened for business here. Jack Thomas, manager, says the plant includes the only pelleting machine in Idaho Falls. The new outlet can provide 30 standard formulas on request.

USDA Reports Outstanding Nov. 1 Pasture Feed Conditions


Nov. 1, 1956
Nov. 1, 1957
PERCENT OF NORMAL
80 and over Good to excellent
65 to 80 Poor to fair
50 to 65 Very poor
35 to 50 Severe drought
Under 35 Extreme drought

BOOM YEAR FOR PASTURE—The graphs above compare pasture conditions Nov. 1, 1956, left, with those for Nov. 1, this year. Pastures continued to improve during October and on Nov. 1 were in the best condition for the country as a whole since 1950. Condition of pastures was 82% of normal, compared with 80% Oct. 1 and only 58% on Nov. 1 last year. Farm pastures showed a gain in October, when the normal trend is a slight drop in condition. Rains and favorable weather improved pasture feed in most sections of the country, and particularly in north Atlantic states and the West. Winter grasses and fall seeded plains are providing generally good grazing.

THE FEED MARKETS

★ ★ ★ ★

Demand — Supply — Trends — Prices

Quotations on feed ingredients shown in these and adjoining columns are wholesale prices, per ton, bagged, for prompt delivery, unless otherwise noted. They are the latest quotations available from Feedstuffs correspondents and are not necessarily those in effect on date of publication. The prices represent fair average trading values and do not necessarily represent extreme low or high levels at which individual sales might have occurred. A descriptive summary of supply and demand factors prevalent in the feed market appears on page 2.

A AND D FEEDING OIL

Denver: Demand slow; trend unchanged; supply ample; 2,250 A, 300 D 22½¢.

Seattle: Demand slow; trend steady; supply good; 300 D, 2,250 A 22¢ lb.; 300 D, 1,500 A 19¢ lb.; 300 D, 750 A 17¢ lb.; all ex-warehouse, drums included.

Chicago: Demand fair; supply adequate; straight A feeding oil, with 10,000 units vitamin A per gram 9@10¢ a million units of vitamin A, l.c.l., packed in 55 gal. drums, f.o.b. Chicago, drums included.

Minneapolis: 10,000 A 35¢ lb.; 300 D, 2,250 A 21½¢ lb.; 300 D, 1,500 A 20½¢ lb.; 300 D, 75 A 18½¢.

New York: Trend steady; price per lb. in 55-gal drums (413 to 420 lb.): 300 ICU, 750 A 13½@15½¢, 1,500 A 15½@17¢, 2,250 A 17½@20¢, 3,000 A 19½@21¢; 600 ICU, 1,500 A 16@18¢, 2,250 A 18@19½¢, 3,000 A 20@21½¢; f.o.b. Massachusetts, New York or Pennsylvania.

ALFALFA MEAL

New Orleans: Demand poor; trend steady; supply adequate; dehydrated, 17% protein, vitamin A guaranteed $59@62; pellets $55 @57.

Ft. Worth: Demand fair; supply adequate; Kansas dehydrated, 17%, 100,000 A $58.75@61.75 by rail, $54 by truck; suncured No. 1 13% protein, ¼-in. grind, truck $40, November; Nebraska origin $42.50@43.50 November through December.

Seattle: Demand slow; trend steady; supply good; 15% protein suncured $43, delivered, carlots; 136,000 A unit dehydrated $67, delivered, carlots.

Kansas City: Demand slow to fair; not much market change; new production about dried up; dehydrated alfalfa meal with 17% protein and 100,000 units of vitamin A guaranteed on arrival $50@52, sacked, with blenders at the higher level; 18% protein 125,000 units A meal $57, sacked; 17% 100,000 A pellets $46@48, bulk; non-guaranteed A meal $45, sacked, but scarce; suncured meal in slow demand and prices about steady but not strong; No. 1 fine ground $36.50@37, 15% protein No. 1 fine ground $38@39, No. 1 ¼-in. $35@35.50, No. 2 ¼-in. $33@33.50.

Los Angeles: Demand and trend steady; supply ample; dehydrated, 17% protein, 100,000 A $50@51; suncured, 15% protein $45.

St. Louis: Demand slow; trend steady; supply ample; 13% fine suncured $41.50; 17%, 100,000 vitamin A $57.

Memphis: Demand poor; trend steady; supply ample; dehydrated, 17% protein, guaranteed 100,000 units vitamin A $56.

Chicago: Demand slow; supply weaker; 17% dehydrated, with 100,000 units vitamin A guaranteed $57.50; 17% with no A guaranteed $54; 13% suncured $50.

Minneapolis: Prices remained steady; supplies were good and demand slow; 17% dehydrated, 100,000 units of vitamin A guaranteed $55@57; pellets, bulk $51.50@54.50; granules and oil treated, bulk, Minneapolis $55@56.

Buffalo: Demand poor; trend steady; supply adequate; $66, sacked, Boston.

Portland: Demand slow; supply ample; trend unchanged; suncured $39, dehydrated $53.

Philadelphia: Demand slow; trend unsettled; supply light; 17% dehydrated $65.50.

Cincinnati: Demand poor; trend steady; supply adequate; 17% dehydrated, 100,000 vitamin A $57; 13% fine suncured $48@48.50.

Denver: Demand slow; trend steady; supply ample; 100,000 A, 17% $41.

Omaha: Demand fair; supply ample; 17% dehydrated, 100,000 A, papers or burlap $52; bulk pellets $48.

ANIMAL FATS (STABILIZED)

San Francisco: Demand fair; supply ample; bleachable fancy 8¾¢ lb.; yellow grease 8¢ lb.

Ft. Worth: Demand good; supply scarce; prime tallow, tank cars 8¾¢ lb.; drums 10¼¢ lb., f.o.b. north Texas packing plants with returnable drums.

New Orleans: Demand fair to good; trend steady; supply light; 8½@8¾¢ lb., carlots, f.o.b. producers' plants; customers' drums 10@10¼¢ lb.

St. Paul: More supplies were available and export demand slackened; price unchanged at 8¼¢ lb. for bleachable fancy, f.o.b. producers' plants.

Kansas City: Demand good; trend steady; supply adequate; bleachable fancy tallow 8¼@8⅝¢ lb.

Chicago: Demand slow; supply adequate; bleachable fancy tallow, tank truck or carlots 8¼¢ lb., yellow grease 7¾¢ lb.

Louisville: Demand good; trend very steady; supply fair; bleachable white 8¼¢ lb.; white tallow 8¢ lb.; yellow grease 7¾¢ lb.

Denver: Demand good; trend strong; supply ample; prime tallow 8@8¼¢ lb.

BARLEY FEED

Portland: Demand slow; supply ample; trend unchanged; rolled $58, ground $59.

Seattle: Demand fair; trend firmer; supply good; whole $55, ground $55, rolled $57, all ex-warehouse, l.c.l., sacked.

Ogden: Supply average; rolled $41@45; whole $37@41.

Milwaukee: Demand good; supply fair; needles $8¢@$1.08; ground $38.

Los Angeles: Demand and trend steady; supply ample; standard rolled $2.99 cwt., sacked; standard ground $2.99 cwt., sacked.

Baltimore: Demand dull; supply light; $46.40.

Chicago: Demand dull; supply light; $36.

New Orleans: Demand fair; trend firmer; supply adequate; ground barley $64@65.

San Francisco: Demand fair; supply ample; rolled $56, ground $55.

Philadelphia: Demand slow; supply fair; pulverized $44.50.

BENTONITE (SODIUM)

Cincinnati: Demand steady; supply adequate; f.o.b. Cincinnati, minimum 30-ton carlots: 80 granular $30.21; 200 mesh fine $29.96.

Chicago: Demand steady; supply adequate; f.o.b. Wyoming and South Dakota shipping points: granular, 30 mesh $16.50; fine granular, 80 to 100 mesh $13.75; powder, 200 mesh $13.50; f.o.b. Belle Fourche, S.D., minimum 30-ton carlot: 80 granular $13.50 net; 200 mesh fine $13.25 net.

Denver: Demand fair; trend steady; supply ample; $12.50, f.o.b. Wyoming and South Dakota shipping points.

BLOOD FLOUR

Louisville: Demand good; trend steady; supply normal; $95@100.

BLOOD MEAL

New Orleans: Demand fair; trend steady; supply ample; $100@102.50.

Denver: Demand fair; trend weak; supply ample; $85@87.50.

Los Angeles: Demand slow; trend unchanged; supply adequate; $5.75 a unit of ammonia.

Cincinnati: Demand fair; trend steady; supply adequate; $121@125.

Chicago: Demand fair; supply ample; $110@120, guaranteed 80% protein.

Portland: Demand slow; supply ample; trend unchanged; $98.

Louisville: Demand good; trend steady; supply normal; $95@100.

San Francisco: Demand good; supply tight; $6.25 a unit of ammonia.

Ogden: Supply average; $100 in 100-lb. bags, f.o.b. Ogden.

BONE MEAL (STEAMED)

San Francisco: Demand good; supply ample; $75.

Ft. Worth: Demand quiet; supply adequate; $85 sacked, f.o.b. Ft. Worth, local manufacture.

Louisville: Demand slow; trend steady; supply normal; $75@80.

Los Angeles: Demand fair; trend unchanged; supply adequate; imported $67.

Chicago: Demand and supply fair; $67.50 @85.

Buffalo: Demand good; trend steady; supply ample; $87.50, sacked.

Seattle: Demand and trend steady; supply good; $88.50, ex-dock, truck lots.

Cincinnati: Demand better; trend steady; supply adequate; $80, sacked, f.o.b. Cincinnati.

Portland: Demand slow; supply ample; trend unchanged; $95.

Denver: Demand slow; supply ample; trend unchanged; $70, f.o.b. West Coast.

New Orleans: Demand fair; trend steady; supply ample; $85@87.

BREWERS DRIED GRAINS

Philadelphia: Demand slow; trend unsettled; supply very light; $59.

New Orleans: Demand fair; trend steady; supply ample; $51@54.

Cincinnati: Demand poor; trend steady; supply adequate; $52.65.

Los Angeles: Demand and trend steady; supply adequate; $49 bulk, $53 sacked.

St. Louis: Demand good; trend steady; supply limited; $47.

Louisville: Demand good; trend stronger; supply normal; $51.

Chicago: Demand and supply fair; 28% $47.50@49.

Buffalo: Demand and supply fair; trend steady; $51, bulk, Boston.

Ft. Worth: Demand slow; supply moderate; 26% $57.85, delivered Ft. Worth, November.

San Francisco: Demand fair; supply ample; $54.

BREWERS DRIED YEAST

San Francisco: Demand fair; supply good; 10¢ lb.

Louisville: Demand fair; trend steady; supply ample; 10@10½¢ lb.

Seattle: Demand slow; trend steady; supply ample; $12 cwt.

Los Angeles: Demand and trend steady; supply adequate; 9½¢ lb. in 5-ton lots; 11¢ lb. in less than 5-ton lots.

Cincinnati: Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11½¢ lb.

St. Louis: Demand fair; supply adequate; 10¢ lb. in carlots; 10½¢ lb. in 5-ton lots; 11¢ lb. in ton lots; 11½@12¢ lb. in less than ton lots.

Pittsburgh: Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11½¢ lb.

New Orleans: Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11½¢ lb.

New York: Carlots 9½¢ lb.; 10-ton lots 10¢ lb.; 5-ton lots 10½¢ lb.; ton lots 11¢ lb., f.o.b. New Jersey.

Milwaukee: Demand good; supply limited; 10½@11½¢ lb. in carlots; 10½@12½¢ lb., l.c.l.

Chicago: Demand good; supply limited; 10@11½¢ lb. in carlots; 10½@12½¢, l.c.l.

Buffalo: Demand good; trend steady; supply limited; $10.65 cwt.

Portland: Demand slow; supply ample; trend unchanged; 8½¢ lb.

Cincinnati: Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11½¢ lb.

Denver: Demand slow; trend steady; supply ample; $10 cwt.

Omaha: Demand and supply good; 9½¢ lb.

BUTTERMILK-CONDENSED

New Orleans: Demand slow to fair; trend steady; $4.75@4.95 in 500-lb. lots.

Philadelphia: Demand slow; supply fair; $4.25 cwt.

San Francisco: Demand fair; supply good; $5 cwt.

Ogden: Supply normal; $4.95, 100-lb. drum.

Chicago: Demand slow; supply adequate; $3.25@3.50 cwt. in carlots.

Los Angeles: Demand slow; trend unchanged; supply adequate; 5½¢ lb. in 100-lb. lots; 4¾¢ lb. in 500-lb. lots.

CALCITE CRYSTALS AND FLOUR

(All prices net, including freight and tax)

New York: Crystals $15.30, flour $10.30.
Buffalo: Crystals $16.16, flour $11.16.
Toledo: Crystals $18.06, flour $13.06.
Boston: Crystals $16.69, flour $11.69.
Limecrest, N. J.: Crystals $10.50, flour $5.50.

CALCIUM CARBONATE

Cincinnati: Demand fair; trend steady; supply adequate; $8@9.

Seattle: Demand and trend steady; supply good; $14, ex-warehouse, truck lots.

Los Angeles: Demand and trend steady; supply ample; $10.25.

Minneapolis: Plain $11; iodized (⅛ lb. KI per ton) $14.45; iodized manganesed $15.90, in 100-lb. bags.

Chicago: Plain $8.90 ton in 100-lb. bags, delivered.

CHARCOAL

Cincinnati: Demand good; trend steady; supply adequate; briquets $120, 25-lb. bags, f.o.b. warehouse, Cincinnati.

Los Angeles: Demand slow; trend unchanged; supply ample; hardwood poultry $156, less than ton lots; $144.40, ton lots.

Chicago: Demand quiet; supply adequate; poultry charcoal $102 in 50-lb. multiwalls.

San Francisco: Demand steady; supply ample; $135.

COCONUT MEAL

Seattle: Demand and trend steady; supply ample; $69, delivered, truck lots.

San Francisco: Demand fair; supply ample; solvent $54, expeller $57.

Los Angeles: Demand slow; trend easier; supply ample; copra cake $55@56, offshore, November.

Portland: Demand slow; supply ample; trend unchanged; $62.

COD LIVER OIL (FORTIFIED)

New York: Trend steady; price per lb. in 55-gal. drums (413 to 420 lb.): 300 ICU, 750 A 14½@15½¢, 1,500 A 16½@19¢, 2,250 A 18½@21¢, 3,000 A 21½@23¢; 600 ICU, 1,500 A 17½@19½¢, 2,250 A 20@22¢, 3,000 A 22@23¢; f.o.b. Massachusetts, New York and Pennsylvania.

CONDENSED FISH SOLUBLES

Denver: Demand slow; trend steady; supply ample; $180 dried.

Los Angeles: Demand good; trend firm; supply very limited; 5¼@5½¢ lb.

New York: Demand and supply fair; trend steady; 4⅝@5¢ lb., f.o.b. eastern shore.

New Orleans: Demand very good; trend firm; supply very light; 50% solids, menhaden $100, f.o.b. Gulf.

CORN GLUTEN FEED AND MEAL

(All quotations for all cities are sacked basis, bulk basis $5 less)

Minneapolis: Feed $43.59, meal $73.59.
Atlanta: Feed $49.98, meal $79.98.
Birmingham: Feed $49.15, meal $79.15.
Boston: Feed $48.54, meal $78.54.
Chicago: Feed $37, meal $67.
Cleveland: Feed $43.93, meal $74.93.
Denver: Feed $47.20, meal $77.20.
Ft. Worth: Feed $45.65, meal $75.65.
Indianapolis: Feed $42.15, meal $72.15.
Kansas City: Feed $37, meal $67.
Louisville: Feed $44, meal $74.
New Orleans: Feed $46.78, meal $76.78.
New York: Feed $48.12, meal $78.12.
Norfolk: Feed $47.40, meal $77.40.
Philadelphia: Feed $47.71, meal $77.71.
Pittsburgh: Feed $45.65, meal $75.65.
St. Louis: Feed $37, meal $67.

CORN OIL MEAL

Cincinnati: Demand poor; trend steady; supply adequate; $49.

Louisville: Demand dull; trend very weak; supply normal; $45.98, reported off $3 ton.

COTTONSEED OIL MEAL

Ogden: Supply normal; 41% $70@75.

San Francisco: Demand good; supply ample; expeller $58.50, solvent $57.50.

Ft. Worth: Demand fair; offerings light on old process, sufficient on solvent; carlots, 41% old process: $55@57, f.o.b. north and central Texas mills; solvent 41% low gossypol $54.50@55.50, delivered Ft. Worth; pellets $2 additional; cottonseed hulls $17.50, delivered Ft. Worth.

Louisville: Demand fair; trend stronger; supply ample; old process $61.15; new process $59.50.

Seattle: Demand fair; trend steady; supply good; $69 delivered truck lots, 41% expeller process.

Wichita: Demand slow; supply sufficient; 41% old process $60.50.

Portland: Demand slow; supply ample; trend unchanged; $64.

Philadelphia: Demand slow; supply fair; $68.

Cincinnati: Demand poor; trend higher; supply fair; solvent $62.50; old process $66.50.

Denver: Demand slow; trend unchanged; supply ample; 2% fat, 30-ton car $50.

Omaha: Demand fair; supply adequate; 41% solvent $64.

New Orleans: Demand poor; trend steady; supply adequate; 41% old process $69@69.50.

Chicago: Demand slow; supply adequate; hydraulic $63.50; solvent $60.50.

Buffalo: Demand poor; trend steady to higher; supply fair; $70, sacked, Boston.

Los Angeles: Demand slow; trend weaker; supply ample; $57.

Kansas City: Demand fair; trend stronger; persistent rains have retarded seed deliveries in some areas, particularly Texas; $49.50@50, sacked, Memphis, for solvent meal; $51.50@52.50 for old process.

Memphis: Demand fair; trend firmer; supply limited; prime 41% protein, old process $51.50, sacked; new process, 41% solvent $50, sacked.

St. Louis: Demand slow; trend up; supply limited; $55.75.

Atlanta: Demand fair; trend steady; supply ample; 41% $60, sacked, immediate.

CURACAO PHOSPHATE

New York: Trend steady; ground Curacao phosphate in 100-lb. bags $48, f.o.b. cars or trucks, New Orleans, Jacksonville, Fla., or Philadelphia.

D ACTIVATED ANIMAL STEROL, POWDERED

Cincinnati: Demand fair; trend steady; supply ample; 1,500 ICU 11@12¢; 3,000 ICU 18¢, warehouse.

New York: Trend steady; price per lb. in 50- and 100-lb. bags or 100-lb. drums: 1,500 ICU 8@12¢ bagged, 12@13¢ drums; 3,000 ICU 13@17¢ bagged, 17@18¢ drums; f.o.b. or delivered basis Pennsylvania, Delaware or New York.

Kansas City: Demand normal; trend steady; supply adequate; 10½@11¢ lb.

D ACTIVATED PLANT STEROL, POWDERED

Chicago: Demand good; supply adequate; 4,000,000 U.S.P. units per lb., 15¢ lb., ton lots and less 17¢; 12,000,000 units per lb., 5 tons to a carload 28¢ lb.; ton lots and less 30¢ lb.

DEFLUORINATED PHOSPHATE

Coronet, Fla.: Minimum phosphorus 17%, minimum calcium 34%, maximum fluorine .17% $58 net ton, f.o.b. Coronet in 100-lb. multiwall bags, $55 in bulk.

Tupelo, Miss.: Minimum phosphorus 13%, minimum calcium 31%, maximum fluorine .12%, $51 net ton, f.o.b. Tupelo in 100-lb. multiwall bags, $48 in bulk.

Houston: Minimum phosphorus 19%, minimum calcium 32%, maximum calcium 35%, maximum fluorine .19% $69.50 net ton, f.o.b. Houston, 100-lb. multiwall bags; $66.50 in bulk.

Wales, Tenn.: Minimum phosphorus 18%, minimum calcium 33%, maximum calcium 36%, maximum fluorine .18% $67.10 net ton, f.o.b. Wales, in 100-lb. multiwall bags, $64.10 in bulk.

Boston: Demand fair; supply light; $85, f.o.b. eastern shipping points.

Cincinnati: 18% phosphorus $78.98; 13% phosphorus $64.98, sacked, f.o.b. Cincinnati.

DICALCIUM PHOSPHATE

Texas City, Texas: 19% minimum phosphorus, 25% minimum calcium, 28% maximum, 0.11% maximum fluorine $76 net ton, f.o.b. Texas City in 100-lb. multiwall bags.

Trenton, Mich.: Minimum phosphorus 21%, maximum fluorine .01% guaranteed $90.30, f.o.b. Trenton, in 100-lb. multiwall bags; minimum phosphorus 18½%, maximum fluorine .01% guaranteed $79.55, f.o.b. Trenton in 100-lb. multiwall bags.

Columbia, Tenn.: Minimum phosphorus 18½%, minimum 25% calcium, maximum .01% fluorine guaranteed $79.55 ton, f.o.b. Columbia, in 100-lb. multiwall bags; freight equalized with nearest producing point, carload basis; bulk $3 ton less.

Chicago: Stock food grade, 18.5% phosphorus, 20,000 lb. or more $79.55 net ton in 100-lb. papers, basis Chicago Heights, Ill., or Nashville, Tenn., less than 20,000 lb. $89.55; 21% phosphorus, 20,000 lb. or more $90.30, basis Chicago Heights and Nashville, less than 20,000 lb. $100.30; bulk, boxcars or hoppers, $3 net ton less than bagged material.

Bonnie, Fla.: Minimum phosphorus 18½%, granular $79.55; freight equalized with closest producing point, carload basis.

Minneapolis: 18.5% phosphorus, 24% calcium granular or fine ground $90.25, delivered; $3 less in bulk.

Cincinnati: 18½% phosphorus $88@89.

Denver: Demand fair; trend unchanged; supply ample; 18.5% $74, f.o.b. Texas City.

Portland: Demand slow; supply ample; trend unchanged; $100.

DISTILLERS DRIED GRAINS

Cincinnati: Demand poor; trend steady; supply adequate; $54.

Buffalo: Demand fair; trend steady; supply adequate; $55, bulk, Boston.

Seattle: Demand dull; trend steady; supply ample; $63, delivered truck lots.

Louisville: Demand good; trend steady; supply fair; production increasing; bourbon grains: light $50, dark $51, solubles $77.

Philadelphia: Demand slow; supply light; $59.

San Francisco: Demand fair; supply ample; solubles $85.

DRIED BEET PULP

Portland: Demand slow; supply ample; trend unchanged; $52.

Atlanta: Demand slow; trend weak; supply ample; $64.25, sacked, immediate.

Milwaukee: Demand good; supply fair; plain $49, molasses $49.

Los Angeles: Demand and trend steady; supply ample; molasses $45.50.

Buffalo: Demand poor; trend steady; supply adequate; $57.50, sacked, Boston.

Ft. Worth: Demand slow; supply sufficient; carlots, 50-lb. papers $58@59, November-December, delivered Ft. Worth.

New Orleans: Demand fair; trend steady; supply ample; $52@58.

Seattle: Demand slow; trend easy; supply good; $43, delivered carlots, new crop.

Cincinnati: Demand fair; trend steady; supply adequate; $55@56.

Ogden: Supply normal; $39@43.

San Francisco: Demand good; supply fair; $42.80.

DRIED BUTTERMILK

Ogden: Supply average; $7.25, 100-lb. bag.

Louisville: Demand dull; trend steady; supply normal; 10@11¢ lb.

Wichita: Demand slow; supply sufficient; $8 cwt.

Chicago: Demand and supply fair; medium acid $9.25@9.50; sweet cream $9.50@9.75 cwt. in carlots.

Los Angeles: Demand fair; trend steady; supply ample; 11¢ lb.

Milwaukee: Demand good; supply fair; $9 cwt.

Buffalo: Demand good; trend firmer; supply limited; $10.25 cwt.

Minneapolis: Prices unchanged; supply limited; demand slow; $9@9.50 cwt.

New Orleans: Demand fair; trend steady; supply adequate; $9@9.25 cwt.

San Francisco: Demand fair; supply ample; 11¢ lb.

Ft. Worth: Demand very slow; supply light; local production $10 cwt., f.o.b.

DRIED CITRUS PULP

New Orleans: Demand good; trend steady; supply limited; $49@52.

Atlanta: Demand good; trend steady; supply limited; $49; meal $37.50, sacked, immediate.

Los Angeles: Demand good; trend steady; supply limited; orange pulp $36 bulk, $41 sacked; lemon pulp $34 bulk, $39 sacked.

Buffalo: $35, sacked, nominal, f.o.b. Florida points.

San Francisco: Demand good; supply fair; meal $52.

DRIED SKIM MILK

Portland: Demand slow; supply ample; trend unchanged; $12.50 cwt.

Louisville: Demand slow; trend steady; supply normal; 11@12¢ lb.

San Francisco: Demand and supply fair; 13½¢ lb.

Chicago: Demand slow; supply adequate; $10.25@10.50 cwt.

Milwaukee: Demand good; supply fair; $10 cwt.

Los Angeles: Demand slow; trend unchanged; supply adequate; 14¢ lb. in less than ton lots; 13¾¢ lb. in ton lots.

Minneapolis: Prices unchanged; supply limited; demand slow; $10.50@11 cwt.

Buffalo: Demand good; trend steady; supply ample; spray $10.65 cwt.; roller $11.50 cwt.

Ogden: Supply average; $15.15, 100-lb. drum.

Philadelphia: Demand slow; supply fair; $12.50 cwt.

Cincinnati: Demand fair; trend steady; supply adequate; 10½@11¢ lb.

New Orleans: Demand slow; trend steady; supply ample; $10.75@11.50 cwt.

DRIED WHEY

New Orleans: Demand fair; trend steady; supply adequate; $5.75@6.10.

Denver: Demand slow; supply ample; trend unchanged; $7 cwt.; $6.10 carlots.

Cincinnati: Demand fair; trend steady; supply adequate; $5.35 cwt.; sweet $5.75 cwt.

Philadelphia: Demand slow; supply fair; $6.25 cwt.

Portland: Demand slow; supply ample; trend unchanged; $6.05 cwt.

Seattle: Demand and trend steady; supply good; $6.25 cwt., ex-warehouse, L.c.l.

Louisville: Demand slow; trend steady; supply ample; 6¢ lb.

Ft. Worth: Demand fair; supply adequate; carlots, standard $6.10 cwt., sacked, delivered Ft. Worth or any Texas point or in ton lots, f.o.b. warehouse, Ft. Worth.

San Francisco: Demand steady; supply good; $5.50 cwt.

Ogden: Supply average; $6.90, 100-lb. bag.

Minneapolis: Prices unchanged; supply limited; demand slow; $5.50@5.75 cwt.

Chicago: Demand slow; supply adequate; $5.25 cwt., in carlots.

Los Angeles: Demand fair; trend steady; supply adequate; $5.75 cwt. in carloads; $6 cwt. in l.c.l.

Kansas City: Demand fair; trend steady; supply moderate; $5.10 cwt. for both regular and partially delactosed.

FISH MEAL

Minneapolis: Demand quiet; supply adequate; price trend unchanged; 70% Canadian herring $1.96 a unit of protein, West Coast; 60% meal $143, delivered, Minneapolis.

Buffalo: Demand good; trend steady; supply ample; 60% protein menhaden $140 bulk, $146 sacked.

Ogden: Supply average; $2.20 a unit, f.o.b. Coast; 65% $151@153.

San Francisco: Demand fair; supply ample; $2.07½ a unit of protein.

Ft. Worth: Demand improving; offerings light on Canadian herring, sufficient on imported at Houston; Canadian herring $2.05 nominal, a unit protein, f.o.b. Northwest Canada; imported 60% protein $134, f.o.b. Houston.

Milwaukee: Demand good; supply fair; 60% $156, Milwaukee.

Los Angeles: Demand slower; supply adequate; trend steady; $2.05 a unit of protein.

Chicago: Demand slow; supply ample; eastern menhaden fish meal, 60% protein $130@133; western blended, 60% protein $118@120; Gulf $130@133; Northwest herring-salmon blend $120; Canadian herring 72% protein $1.05 a unit of protein; 60% blended $148, delivered Midwest points.

Louisville: Demand slow; trend steady; supply normal; $150.

Seattle: Demand fair; trend firm; supply ample; $2 a unit protein, ex-dock (Alaska herring).

Portland: Demand slow; supply ample; trend unchanged; $2, f.o.b. Vancouver.

Cincinnati: Demand fair; trend steady; supply adequate; $150.

Denver: Demand slow; trend unchanged; supply ample; $2.05, 70% herring, f.o.b. Seattle; 65% menhaden $132, f.o.b. Gulf.

New Orleans: Demand good; trend firm; supply very light; menhaden 60% $131@136; scrap $128@130, f.o.b. Gulf.

HAY

Seattle: Demand slow; trend firm; supply good; alfalfa, U.S. No. 2 green $25, delivered, truck lots.

Denver: Demand spotty; trend steady; supply ample; baled alfalfa $24@25; baled mountain $32@35.

New Orleans: Demand improving; trend weaker; supply ample; No. 1 alfalfa $40@42; prairie $29@31; mixed clover and timothy $31.50@33.

Los Angeles: U.S. No. 1 $34@35, offerings scarce, demand good; U.S. No. 1 leafy $31.50@33, offerings light, demand good; U.S. No. 2 green $30.50@31.50, offerings limited, fair demand; U.S. No. 2 $27@28, liberal offerings, fair demand.

Ogden: Supply normal; $1 bale; $15@17 in field or barn.

Ft. Worth: Demand fair for alfalfa, practically nil for prairie and Johnson grass; supply sufficient; carlots, baled, No. 1 alfalfa $40@42, No. 2 $38@40; prairie No. 2 $30@32; No. 2 Johnson $28@30, delivered Texas common points.

Louisville: Demand dull; trend weak; supply good; No. 1 hay, any local variety $23@25, No. 2 $21@23; straw $18@20.

Wichita: Demand slow; supply ample; prairie $16@18; alfalfa $16@20.

Portland: Demand slow; supply ample; trend unchanged; $24@25.

Philadelphia: Demand slow; supply fair; $29@30.

Cincinnati: Demand poor; trend steady; supply adequate; No. 1 timothy $20.50; No. 1 red clover $22; No. 1 second cutting green alfalfa $24; No. 1 red clover mixed $24; wheat or oat straw $18.

HOMINY FEED

Louisville: Demand slow; trend steady; supply normal; $48.20.

Milwaukee: Demand good; supply fair; $45.50, sacked, f.o.b. Milwaukee.

St. Louis: Demand slow; trend steady; supply limited; yellow $45.

Kansas City: Demand moderate; supply light; prices quoted nominally at $36 bulk and $39.50 sacked; but some reported traded at $33 bulk.

Memphis: Demand nil; trend steady; supply ample; white $46.50, yellow $46.50.

Chicago: Demand fair; supply tight; $46.

Seattle: Demand slow; trend weak; supply good; $57, delivered, sacked, carlots.

Buffalo: Demand fair; trend steady to higher; supply poor; $51.50, bulk, Boston.

Cincinnati: Demand fair; trend steady to higher; supply adequate; $46.50@47.

LINSEED OIL MEAL

Minneapolis: Demand slow; supplies adequate; price trend slightly weaker; $44@44.50 November, $46.50 for December, $50.50 January-March; demand good for 22% flaxseed screenings oil feed $31.50.

San Francisco: Demand fair; supply ample; $65.

Ft. Worth: Demand slow; supply adequate; carlots, 34% extracted, November $70.13, December $72.13.

Louisville: Demand slow; trend easy; supply normal; old process $68.80, new process $61.80.

Kansas City: Demand light; trend about steady; market largely nominal in this area; $43@44, bulk, Minneapolis.

Milwaukee: Demand and supply good; old process $61, new process $54.

Los Angeles: Demand slow; trend unchanged; supply adequate; local production 29% protein $66.

Chicago: Demand fair; supply adequate; solvent $55.50@56; expeller $63.50@64.

Seattle: Demand slow; trend steady; supply limited; $83, delivered truck lots, 29% protein.

Wichita: Demand fair; supply sufficient; 34% $73.

Portland: Demand slow; trend steady; supply ample; $78.

Philadelphia: Demand and supply fair; 34% $68.

Cincinnati: Demand poor; trend lower; supply adequate; new process $80; old process $66.50.

Denver: Demand slow; trend unchanged; supply ample; $69.

Omaha: Demand fair; supply adequate; 32% expeller $66, pellets $68.50; 34% solvent $57.50, pellets $60.

New Orleans: Demand fair; trend steady; supply adequate; 32% or higher protein $68@68.50.

MALT SPROUTS

New Orleans: Demand fair; trend steady; supply limited; $48@50.50.

Chicago: Demand fair; supply decreasing; No. 1 $40@41.

Milwaukee: Demand good; supply fair; oddweights $41, evenweights $46.

Cincinnati: Demand poor; trend steady; supply adequate; No. 1 $48.

MEAT AND BONE MEAL

Buffalo: Demand just fair; trend easier; supply ample; 50% meat scraps $70 bulk, $75 sacked.

St. Paul: Demand quiet; prices lower; supplies adequate; $72@78.

Ogden: Supply average; $78 in 100-lb. bags.

San Francisco: Demand good; supply ample; $1.45 a unit of protein.

Ft. Worth: Demand fair; supply sufficient; meat and bone, 50% $70@72, f.o.b. or delivered Ft. Worth.

Louisville: Demand good; trend steady; supply ample; $75@80.

Seattle: Demand good; trend easy; supply fair; $82.50, ex-warehouse, 50% protein.

Wichita: Demand good; supply sufficient; 50% $80, f.o.b. plant; 55%, no quotations, no offerings.

Cincinnati: Demand excellent; supply short; trend stronger; 50% $72, sacked, f.o.b. Cincinnati.

Portland: Demand slow; trend lower; supply ample; $1.50 a unit of protein.

Denver: Demand very slow; trend weak; supply ample; 50% protein $63@65.

Omaha: Demand fair; supply ample; meat $57.50.

New Orleans: Demand fair; trend steady; supply adequate; 50% $73@75.

Chicago: Demand and supply fair; 50% protein $76.50@77.50.

Los Angeles: Demand steady; trend firm; supply adequate; $1.60 a unit of protein.

New York: Demand fair; trend steady; supply good; 50% $72.50, 55% $77.50 bulk; 50% $75.50, 55% $80.50 sacked.

Kansas City: Demand fair; trend steady; supply adequate; $71.50@73, for 50% meat and bone meal.

St. Louis: Demand good; trend lower; supply fair; $73.

MILLFEED

Minneapolis: Demand slow; supplies ample; prices again weaker after a recovery last week; bran and standard midds. $29.50, flour midds. and red dog $35.

Kansas City: Demand slow; trend about unchanged; supply ample; bran $29.50@30.25, shorts $30.50@31, sacked; bran $25.50@26.50, middlings $27.50@28.50, shorts $28@29 bulk.

Wichita: Demand improved; supply sufficient; basis Kansas City: bran $30.25@30.75, shorts $30.50@31; bran declined 50¢ ton and shorts 25¢ ton, compared with the preceding week.

Ft. Worth: Demand quiet; supply sufficient; carlots, burlaps, prompt, bran $38@39, gray shorts $38@39, delivered Texas common points; 50¢ lower on bran and $1.50 lower on shorts compared with previous week.

Denver: Demand fair; trend steady; supply short; bran $33.50, shorts $34, mill run $33.75.

Omaha: Demand poor; supply good; bran $30.25, shorts $30.75, bulk standard midds. $29.

Chicago: Millfeeds could not get up from a low level during the week ending Nov. 13, and even sank farther into a price recession which has lasted for months. There was some hope that the flour mill holiday Nov. 11 might put a cent into supplies and stimulate prices, but this development did not appear immediately. Quotations: bran $34.50@35, standard midds. $35.50@36, flour midds. $38@39, red dog $41@42.

St. Louis: Demand slow; trend lower; supply ample; bran $34.75 sacked, $31.25 bulk; shorts $36.25 sacked, $32.25 bulk; middlings $32.25 bulk.

Cincinnati: Demand fair; trend steady; supply adequate; bran $41.35, middlings $43.35.

Louisville: Demand fair; trend weak; supply ample; bran $41.90, mixed feed $42.55, shorts $42.15, middlings $42.30.

Buffalo: Prices slipped and demand was dull for this time of the year. The lack of demand — blamed on the big supply of grains—came in the face of a pickup up some mixers' business. Spot supplies of bulk and sacked bran were available and middlings were in little better demand, with only a small amount of spot bulk available. Red dog was heavy under a lack of demand from the South. Both bran and middlings were off $1.50. Red dog declined $3. Quotations Nov. 13: bran $34.50@35, standard midds. $35.50@36.50, red dog $41@42. The bulk differential on both bran and middlings was $4.50.

New York: Demand poor; trend lower; supply fair; bran $44@44.60, standard midds. $45.60@46.

Philadelphia: Demand spotty; supply fair; bran $44.50, standard midds. $45.50, red dog $52.

New Orleans: Demand slow; trend easier;

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supply adequate; bran $41@42.75; shorts $40@41.75.

Memphis: Demand poor; trend weak; supply ample; wheat bran $38, gray shorts $38.50, standard midds. $38.50.

Seattle: Demand fair; trend steady; supply ample; $36, delivered common transit points, carlots.

Portland: Demand slow; trend lower; supply ample; $34.

Ogden: Supply normal; to Utah and Idaho: red bran and mill run $36, middlings $41; to Denver: red bran and mill run $43, middlings $48; to California: red bran and mill run $43.50, middlings $48.50, f.o.b. San Francisco and Los Angeles.

San Francisco: Demand fair; supply ample; $43.25, red bran $48.25.

Los Angeles: Standard mill run $42@43.50, slow demand, easier trend, ample supplies; red bran $47@48, demand slow, trend unchanged, ample supplies.

MINERAL FEED

Denver: Demand slow; trend unchanged; supply ample; 7.5% phenothiazine, 45-lb. block $4.60; 8.2% phosphorus, 50-lb. block $3.50; 7.5% phenothiazine, 8.2% phosphorus, 45-lb. block $5.25; 5% phosphorus, 50-lb. block $2.65.

Sioux City: 50-lb. mineral blocks 8.2% phosphorus $92; 7.5% phenothiazine sheep mineral blocks $4 each.

Portland: Demand slow; supply ample; trend unchanged; $42.

Wichita: Demand good; supply ample; all-purpose with iodine, 50-lb. blocks $95, 100-lb. bags $90, f.o.b. plant.

Seattle: Demand fair; trend steady; supply good; mixer mineral $48, ex-warehouse; all-purpose mineral $35, ex-warehouse.

Ft. Worth: Demand fair; supply ample; except light on all-purpose mineral feed; all-purpose granules $89, block $94; mineral phosphorus 6% granules $105, block $110; cattle-sheep mineral 7% phosphorus granules $99, block $103; hog mineral phosphorus 3½% granules $88; phosphorus 2% $78 (all in 50-lb. paper bags).

San Francisco: Demand steady; supply good; all-purpose with iodine $70.

Ogden: Supply average; $108 in 50-lb. blocks; $98, granular, 50-lb. bags.

NIACIN

New York: Trend steady; $8 kilo, 50-kilo lots; $8.10 kilo, 10-kilo lots; $8.20 kilo, 5 and 2½-kilo lots; $8.30 kilo, 1-kilo lots; freight prepaid or paid to destination.

MOLASSES

Cincinnati: Demand fair; trend lower; supply adequate; 11¾¢ gal., New Orleans.

Seattle: Demand slow; trend weak; supply good; $26, f.o.b. Seattle, tank car lots or truck lots.

Louisville: Demand fair; trend very weak; supply good; 11¾¢ gal., tank car lots, f.o.b. Gulf ports.

St. Louis: Demand slow; trend down; supply ample; 11½¢ gal., f.o.b. New Orleans.

Atlanta: Demand fair; trend steady; supply limited; citrus $25, bulk, f.o.b. Florida producing points, immediate.

Kansas City: Demand slow; trend weaker; supply ample; 11½@11¾¢ gal., tank cars, New Orleans.

Milwaukee: Demand fair; supply good; blackstrap 13¢ gal., f.o.b. New Orleans.

New York: Demand fair; trend steady; supply good; blackstrap 21¢ gal., tank cars, tank wagons, f.o.b. New York.

Memphis: Demand poor; trend weak; supply ample; blackstrap 11¾¢ gal., tank car, f.o.b. New Orleans.

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Los Angeles: Demand slow; trend easier; supply ample; $26 bulk, tank cars; $26.25 bulk, tank trucks.

Ft. Worth: Demand slow; supply adequate; blackstrap 14½¢ gal., f.o.b. Houston; delivered Ft. Worth, truck $32.49, seller's market price on date of shipment.

Buffalo: Demand fair; trend steady; supply good; 21½¢ gal., f.o.b. Albany.

Minneapolis: Business fair at the best; prices continued downward trend under way for several months; supplies ample; 11½@11¾¢ gal., f.o.b. New Orleans.

San Francisco: Demand and supply good; $26, f.o.b. cars, Richmond, Cal.

OAT PRODUCTS

Seattle: Demand fair; trend firmer; supply ample; whole $58, ground $58, rolled $60, ex-warehouse, l.c.l., sacked.

Ft. Worth: Demand slow; supply sufficient; oat millfeed $46.35, reground oat millfeed 8% protein $28.75, 3% $24.50.

Louisville: Demand fair; supply normal; trend unchanged; reground $19.80, rolled oats $56.30, feeding oatmeal $79.30, pulverized white $49.80, crimped white $70.30.

Portland: Demand slow; supply ample; trend unchanged; rolled $60, ground $57, cleaned $56.

Los Angeles: Demand slow; trend unchanged; supply ample; pulverized, local production $60.

Memphis: Demand poor; trend steady; supply ample; 2½% protein, reground oat feed $19.20.

Chicago: Demand fair; supply adequate; reground oat feed $13; fine ground feeding oatmeal $70@71; feeding rolled oats $80@81.

Philadelphia: Demand slow; supply fair; pulverized white $52.50; Canadian oat feed $26.50; domestic oat feed $23.

Minneapolis: Demand quiet; supplies plentiful; prices mainly unchanged; feeding rolled oats $54; standard pulverized $43; feeding oatmeal $69; crimped $60.50; reground oat feed $13.

Cincinnati: Demand fair; trend steady; supply adequate; reground oats $21.50; pulverized white oats $56.50; rolled oats $57.50@58.50.

OYSTER SHELL

Cincinnati: Demand fair; trend steady; supply adequate; $21.75.

Portland: Demand slow; supply ample; trend unchanged; western $30, eastern $38, granite grits $26, oyster shell flour $16.

Seattle: Demand and trend steady; supply good; eastern $39, l.c.l., ex-warehouse.

Louisville: Demand good; trend steady; supply normal; in 80-lb. bags $23.17; in 50-lb. bags $23.42; in 25-lb. bags $25.67.

San Francisco: Demand fair; supply ample; local $15, eastern $26.

Los Angeles: Demand and trend steady; supply ample; $14.80.

PEANUT OIL MEAL

Atlanta: Demand fair; trend steady; supply limited; $58, sacked, immediate.

Milwaukee: Demand and supply fair; 26% $48.

PEAT MOSS

San Francisco: Demand fair; supply ample; $3.75 bale.

Los Angeles: Demand fair; trend steady; supply adequate; Canadian 6.1 cu. ft. bales $3.70.

Chicago: Demand and supply moderate; $3.85@3.95 standard 7½ cu. ft. bale.

Seattle: Demand fair; trend steady; supply good; $3.50 bale, l.c.l., ex-warehouse.

Portland: Demand slow; supply ample; trend unchanged; $3.25 bale.

Philadelphia: Demand slow; supply light; $3.12 bale, f.o.b. pier.

POTASSIUM IODIDE, U.S.P.

Cincinnati: Trend steady; 90% KI in calcium stearate or carbonate mixtures, 250-lb. drums $1.81, 200 lb. in 100-lb. drums $1.81, 100-lb. drums $1.83, 25-lb. drums $1.86, f.o.b. Cincinnati.

New York: Trend steady; granular or crystals $1.90 lb. in 250-lb. drums, $1.92 lb. in 100-lb. drums, $1.95 lb. in 25-lb. drums; 90% KI in calcium stearate or carbonate mixtures, $1.81 lb. in 250-lb. drums or 200-lb. lots, $1.83 lb. in 100-lb. drums, $1.86 lb. in 25-lb. drums; f.o.b. New York, New Jersey or Pennsylvania; freight allowed to destination on 100-lb. drums or larger packings.

RIBOFLAVIN

Cincinnati: Trend steady; feed grade (in feed supplements) 4¢ gram in 2.36 to 16 gm./lb. mixtures, freight prepaid or paid to destination.

New York: Trend steady; feed grade (in feed supplements) 4⅛¢ gram in 2.36 to 16 gm./lb. mixtures, freight prepaid or paid to destination.

RICE BY-PRODUCTS

Ft. Worth: Demand fair; supply light; carlots, rice bran $24@25, prompt shipment, f.o.b. south Texas rice mills; hulls $2, f.o.b. mills.

Los Angeles: Demand slow; trend unchanged; supply ample; bran, California production, high fat content $48.

Atlanta: Demand fair; trend steady; supply limited; bran $39, sacked, immediate.

San Francisco: Demand fair; supply ample; bran $45; polished $49.

SCREENINGS

Chicago: Demand fair; supply plentiful; ground grain screenings $28; Canadian, bulk $18.

Denver: Demand fair; trend steady; supply ample; $34.

Buffalo: Demand and supply fair; trend steady to higher; ground, sacked $28.50, New York, lake and rail; unground, bulk $22, New York.

Cincinnati: Demand fair; trend steady; supply adequate; Canadian $25.50; barley $19, both bulk, delivered, Cincinnati.

Ft. Worth: Demand slow; supply sufficient; 12% protein ground $29.50@30.

SORGHUMS

Ft. Worth: Demand fair; offerings of dry milo light; carlots, bulk, No. 2 yellow milo $1.97@1.99, delivered Texas common points.

Cincinnati: Demand fair; trend steady; supply adequate; $2@2.20.

Los Angeles: Demand and trend steady; supply scarce for nearby; milo $2.37½ cwt.

SOFT PHOSPHATE WITH COLLOIDAL CLAY

Atlanta: $20.40@20.67.
Buffalo: $25.31@25.45.
Chicago: $24.77@24.90.
Cincinnati: $23.47@23.60.
Des Moines: $25.23@25.36.
Kansas City: $24.85@25.
Memphis: $22.20@22.47.
Minneapolis: $25.92@26.06.
Philadelphia: $24.32@24.46.
St. Louis: $24.14@24.27.

SOYBEAN OIL MEAL

Decatur: Demand and supply fair; 44% bulk, unrestricted $45@45.50.

Chicago: A steady market at virtually unchanged prices existed for soybean oil meal during the week ending Nov. 13. Supply and demand factors appear to be about in balance. Quotations: 44% soybean oil meal $54.50@55.

Atlanta: Demand fair; trend steady; supply ample; 44% $60, sacked, immediate.

Ft. Worth: Demand good; supply sufficient; carlots, 44% $65.50@68, depending on origin and tonnage; trucks $60.

Minneapolis: Demand quiet; supplies plentiful; prices mainly unchanged; $51.50, bulk, delivered, Minneapolis.

Denver: Demand slow; trend steady; supply ample; $67.

Omaha: Demand fair; supply adequate; 44% solvent $57, pellets $59.50; 41% expeller $63.

Los Angeles: Demand fair; trend firmer; supply ample; $75.24@75.84.

Milwaukee: Demand and supply good; $44, bulk, f.o.b. Decatur.

Kansas City: Demand slow; trend about steady, although western shipment meal is more plentiful than unrestricted; offerings not burdensome; $42.50@43, bulk, Decatur, for Kansas City meal, $42 for western shipment, and $48.50 for unrestricted.

Memphis: Demand fair; trend steady; supply plentiful; prime 44% solvent $50.50, sacked, f.o.b. Memphis.

St. Louis: Demand good; trend steady; supply ample; $55.50.

San Francisco: Demand fair; supply ample; $75.84.

Ogden: Supply average; $87@92.

Louisville: Demand fair; trend stronger; supply ample; $57.23, up 50¢ ton.

Seattle: Demand steady; trend easy; supply good; $78, delivered, carlots.

Wichita: Demand fair; supply inadequate; 44% $60, 50% $68, f.o.b. Wichita.

Portland: Demand slow; trend lower; supply ample; $39, f.o.b. Decatur.

Philadelphia: Demand spotty; supply ample; $44, bulk, Decatur.

Cincinnati: Demand fair; trend steady; supply adequate; $45, bulk, Decatur.

TANKAGE

Cincinnati: Demand good; trend steady; supply very short; 60% digester $82, sacked, f.o.b. Cincinnati.

Omaha: Demand fair; supply ample; $80.

St. Paul: Demand slow; supplies ample; price trend weaker; $69@73.

Ft. Worth: Demand slow; supply sufficient; 60% digester $80@82, f.o.b. Ft. Worth.

Louisville: Demand fair; trend firm; supply ample; 60% $77.50@82.50.

Chicago: Demand and supply fair; 60% protein $72.50@82.50.

Wichita: Demand good; supply sufficient; 60% $80, f.o.b. plant.

Kansas City: Demand fair; trend steady; supply adequate; quoted nominally at $71.50@75, sacked, Kansas City.

St. Louis: Demand fair; trend lower; supply ample; $73.

VITAMIN E FEED SUPPLEMENT

Rochester, N.Y.: Demand and supply good; trend steady; 50- and 100-lb. drums $1.80 lb., 25-lb. drums $1.85 lb., f.o.b. manufacturing plants, freight allowed to destination.

New York: Demand and supply good; trend steady; 50- and 100-lb. drums $1.80 lb., 25-lb. drums $1.85 lb., f.o.b. manufacturing plants, freight allowed to destination.

Cincinnati: Demand good; trend steady; 1,000 lb. in 100-lb. drums $1.70 lb., less than 1,000 lb. in 100-lb. drums $1.80; 1,000 lb. or more in 25-lb. drums $1.75; 25-lb. drums $1.85; freight allowed to destination.

WHEAT GERM MEAL

Buffalo: Demand fair; trend higher; supply poor; commercial grade $56, sacked, f.o.b. Buffalo.

New Orleans: Demand fair; trend slightly higher; supply sufficient; $66@68, cottons.

Delmarva Poultry Group Names Officers

SALISBURY, MD.—The Delmarva Poultry Industry, Inc., has elected the following officers: John Hargreaves, Federalsburg, Md., president; C. E. McCauley, Seaford, Del., vice president; Ed Covell, Denton, Md., vice president; Roy Twilley, Chincoteague, Va., vice president; Webb Cassell, Salisbury, Md., secretary; Louis Shockley, Whiton, Md., treasurer; and J. Frank Gordy, Georgetown, Del., executive secretary.

Mr. Hargreaves, in taking over his new office, said that the coming year is going to see more competition than ever before for the consumers' meat dollar — not only from competing meats but also from other broiler areas. He said that every segment of the Delmarva industry should join forces more closely than ever before to make Delmarva promotion a potent striking force in the big eastern markets.

Annual Party Held

HOUSTON, TEXAS — The annual dinner party for members, their wives and friends was held by the Houston Feed Club recently at the Club Crescendo. The program included a cocktail hour, dinner, floor show and dancing. Lloyd January, Comet Rice Mills, Houston, was program chairman.

Protein Oil Meal Futures Prices Mixed

MEMPHIS — Protein oil meal futures prices were mixed at the close Wednesday, Nov. 13, on the Memphis Board of Trade, compared with Nov. 6.

Cottonseed oil meal made the best gains, resulting from continued unfavorable weather preventing the crop from being harvested.

Trading was in a narrow range during the week and remained slow.

Unrestricted soybean oil meal closed Wednesday, Nov. 13, 45¢ lower to $1 ton higher than on Nov. 6, Eastern Trunk Line soybean oil meal was unchanged to 25¢ higher, bulk solvent cottonseed oil meal was 10¢ lower to 60¢ higher, and sacked old process cottonseed oil meal was 50¢ to $1.50 higher.

Trading included 5,800 tons of unrestricted soybean oil meal, 1,000 tons of Eastern Trunk Line soybean oil meal and 1,700 tons of bulk solvent cottonseed oil meal.

The market was featureless most of the week. Uncertainty over the export outlook, adverse weather and lack of incentive in commodity markets generally were factors in the situation. Most activity was considered hedge lifting on the part of cash interests.

ELMER LENZ

(Continued from page 1)

years. He became secretary in 1941 and secretary-treasurer in 1945. A member of the board of directors of the Executives Club of Chicago, he resides in Evanston, Ill., with his wife and two teen-age daughters.

Both Mr. Murphy and Mr. Quinlan are well-known throughout the feed industry and each has 38 years of service with Allied Mills and predecessor companies. Mr. Murphy has been plant operations vice president since 1946 and Mr. Quinlan has been vice president of the soybean division and head of labor relations since 1941. He also was vice president of the Century Distilling Co., Peoria, Ill., when it was owned by Allied Mills.

Mr. Bolitho, a law graduate of Indiana and Omaha Universities, is a member of the Nebraska Bar Assn. He joined the company in 1929 and has been general credit manager for 16 years.

Elmer H. Reed Dies

KANSAS CITY — Elmer H. Reed, 70, former manager of the grain department of the Corn Products Refining Co., Kansas City, died Nov. 11 at Sterling, Ill., where he recently moved. Mr. Reed retired in 1950. He came to Kansas City in 1922 and became a member of the Kansas City Board of Trade at that time. He served as corn buyer for Corn Products for 28 years.

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G. J. Gapp Promoted To General Mills Post

MINNEAPOLIS—G. J. Gapp, manager of Larro research farm at Indianola, Iowa, for the past three years, has been advanced to advertising product manager in General Mills' Minneapolis headquarters.

W. W. Woodward, feed division advertising manager, said Mr. Gapp will handle dairy and beef cattle feed advertising, merchandising, and marketing. Mr. Gapp joined General Mills in 1951, served for three years as assistant farm manager, and in 1954 won a promotion to the farm manager's position.

Several changes have been made at the firm's research farm, according to Dr. H. Ernest Bechtel, director of research.

R. R. Clayton, poultry superintendent for the past 14 years, succeeds Mr. Gapp as farm manager. Mr. Clayton is a 1938 graduate of Massachusetts State College, where he majored in poultry husbandry.

E. Dale King, crops superintendent at the farm for the past two years, has been appointed to Mr. Clayton's former position.

J. Robert Walker, research editor, has assumed additional duties, according to Dr. Bechtel. Mr. Walker now heads up all educational activities at the farm. His new job includes coordination of visitor tours, preparation of sales material, writing news releases and preparing research reports.

MISSOURI CONFERENCE

(Continued from page 7)

protein to the host animal that has a rather high biological value," Dr. Muhrer said.

The amino acid composition of the organisms was determined and found to be comparable to casein from milk.

In the experimental work, it was shown that rumen organisms produced artificially can be used to make nutrients that are important in the nutrition of larger animals.

New Possibility

"These results point to the possibility of using an artificial rumen to upgrade protein for non-ruminant use," Dr. Muhrer said, "as they can produce a high-quality protein for poultry and swine feeds from a less valuable source of nitrogen."

"We need more basic research to obtain fundamental information of the needs, functions, and products of rumen microorganisms. With a basic research foundation we can build a better ruminant feed and perhaps an even better non-ruminant feed," he concluded.

Pelleting of rations tends to make carbohydrates more available to the ruminant, said Dr. Garner. He cited experimental work conducted at the university designed to study the effects different forms of feed preparation have on ruminant digestion.

Flaked corn was equal or superior to ground corn and better than whole or coarse-cracked corn when fed to sheep or digested in an artificial rumen, Dr. Garner said. Pelleted and crimped oats appeared to be equal in feeding value when digested in the artificial rumen. Both were superior to whole or ground oats. The pelleted oat ration was best for sheep and was followed by crimped and whole oats in that order. Ground oats proved to be unpalatable, he said.

Dr. Garner also told those at the conference that these results indicate that the physical form of grain can influence the rate at which rumen bacteria complete their fermentation process. And, too, the type of fermentation may be changed also.

This means that when a ration high in grain and low in roughage is used, the physical form of the grain can exert an influence on the composition of milk from dairy cattle and the efficiency of gain in fattening ruminants.

Further study will determine exactly what effects the different physical forms of grain have on the feeding value of various rations, Dr. Garner concluded.

Evaluate Pelleting

Complete pelleting of lamb-fattening rations increased feed efficiency and rate of gain in a university feeding trial, said Mr. Thompson.

"One lot of lambs getting a completely pelleted ration of roughages and concentrates made a .46 lb. daily gain and used 5.2 lb. of feed for each pound of gain," he said.

Lambs fed hay and whole grain gained .44 lb. daily and made a pound of gain on 6.3 lb. of feed.

Two other lots of lambs, one fed a pelleted hay-whole grain ration and the other an all-mash ration, gained at a rate of .42 lb. each and had feed efficiency records of 6.2 and 5.9 lb. of feed for each pound of gain respectively.

In the Missouri work, the value of ration preparation ranged from 91¢ ton on the pelleted hay-whole grain ration, to $3.10 ton for the all-mash ration, and to $9.10 ton for the completely pelleted feed, Mr. Thompson pointed out. As noted, most of the increase in ration value comes from increased feed efficiency.

He also noted that digestibility trials with mature wethers showed that pelleted feeds caused a slight depression in the digestion of crude fibers.

Other experimental work has shown that the pelleting of rations fed broilers, swine, sheep, and cattle has increased the rate of gain, feed efficiency, and palatability.

A 12 to 15% increase in average daily gains and a 14 to 20% increase in feed efficiency have been shown to result from pelleting barley rations for swine. Pelleted barley is superior to ground rations of corn, barley, or oats.

In dairy cattle fed finely-ground roughages, the per cent of acetic acid in the rumen decreases while the per cent of propionic acid increases. The acetic acid drop has been associated with a reduction in the fat content of milk without affecting the total amount of solids or total pounds of milk produced, Mr. Thompson said.

Molybdenum Boost

Addition of the mineral molybdenum to semi-purified rations fed lambs increased average daily gains 44% in two University of Missouri feeding trials, Mr. Ellis said. In addition, feed efficiency was increased by 43% in one trial and 38% in the other through the additional use of the mineral.

However, Mr. Ellis pointed out that too much molybdenum may have a toxic effect in sheep and that the indiscriminate use of the mineral may do more harm than good. Symptoms of toxicity may start to appear when rations contain only 5 to 6 ppm. molybdenum.

The semi-purified ration used in the feeding trial contained .3 ppm. molybdenum, he said. Enough of the mineral was added to bring the molybdenum content to 1.8 ppm. in the two trials.

Digestibility studies in the two trials demonstrated that supplemental molybdenum increased the digestibility of cellulose and protein, Mr. Ellis noted. This increased digestibility may account for part of the increased weight gains and feed efficiency which resulted from the addition of molybdenum.

No beneficial effect from added molybdenum resulted when the copper content of the ration was excessive, he said. This is in agreement with studies on the toxicity of molybdenum reported by other research workers.

Mr. Ellis noted that probably no single desirable level of molybdenum can be recommended. Requirements for the mineral in lamb rations will depend on the level of copper. Inorganic sulfate in the ration may also affect the molybdenum requirements. Practical application of the findings in the Missouri work must await further investigations on the molybdenum, copper and inorganic sulfate content of feedstuffs, the availability of feedstuff molybdenum, and the relationship between molybdenum, copper, and inorganic sulfate, he concluded.

POULTRY NUTRITION — Speakers on poultry nutrition and management topics included Dr. J. E. Savage, poultry husbandry; Dr. B. L. O'Dell, agricultural chemistry, and Q. B. Kinder, poultry husbandry.

An unrecognized mineral deficiency in some broiler chick rations may be a lack of zinc, said Dr. O'Dell. In a Missouri project, he continued, broiler chicks raised in battery brooders and fed a ration known to have produced an unrecognized mineral deficiency exhibited several symptoms of improper nutrition.

These included poor growth, shortening of the long bones, poor feathering, leg weakness, keratosis of the extremities, and rapid and labored breathing.

In the study, zinc supplements prevented bone and feather abnormalities which occurred on the basal ration. The zinc supplement produced as rapid growth as did the ash of distillers' dried solubles, Dr. O'Dell stated.

The basal ration contained about 14 ppm. of zinc and 1.5% calcium, Dr. O'Dell said. Supplements that increased the zinc content to about 30 ppm. still didn't promote maximum growth in chicks kept in a galvanized battery but a total of 60 ppm. was adequate.

Thus, it seems that the zinc requirement is greater than 30 but less than 60 ppm. under the conditions of the Missouri test, he noted.

The requirement for chicks housed in batteries treated so as to eliminate zinc contamination from the battery is somewhat higher. According to Dr. O'Dell, a lower calcium level in the diet will decrease the need for zinc but to what extent isn't known at present.

Dr. Savage listed the six trace elements considered essential in broiler rations as manganese, iodine, iron, copper, cobalt and zinc. In addition to these, he cited work by other scientists which shows that molybdenum and bromine are needed.

"Results of recent work definitely indicate that chicks have higher requirements for zinc than we thought," Dr. Savage stated. He advised providing a margin of safety in broiler rations of 10-20 ppm. This can be supplied by using 25 gm. of zinc oxide per ton of feed at a cost of about 3-4¢, he said.

Layer Problems

"There's good evidence that chicks shouldn't be hatched during a period from Oct. 1 through Jan. 15," Mr. Kinder said.

Research data available to date indicate that birds hatched during this period mature too early, lay smaller eggs, have a higher culling rate, lay at a lower rate, and are much less profitable than birds hatched at other seasons of the year, he said.

However, the Missouri poultry management specialist noted that control lighting during the growing period may be an answer to the problem.

Attention has been focused on the performance of birds hatched in offseasons by the use of cage layers and systems of multiple brooding for flock replacement in commercial egg production. And, too, the hatching of broiler-strain birds for hatchery egg production has also pinpointed attention on the performance of such birds.

It's been well demonstrated that season of hatch has a considerable effect on date of sexual maturity under natural light, Mr. Kinder pointed out.

Chicks hatched in February, March, and April need about 180 days to reach average sexual maturity. June, July and August hatchings need about 200 days—without artificial light—and November, December, and January hatches mature in only about 155 days. Age of bird at sexual maturity has a large effect on initial egg size with the early maturing birds laying smaller eggs.

A controlled study in Delaware indicates that meat-strain hens hatched in February, March, April, and May averaged 44% production. This compares to 38% from chicks hatched from June to September and only 33% production from chicks

Production of Millfeeds

Production of millfeeds in tons for week ending Nov. 9, and prior two weeks, together with season total of (1) principal mills in Nebraska, Kansas and Oklahoma and the cities of Kansas City and St. Joseph; (2) principal mills of Minnesota, Iowa, North and South Dakota and Montana, including Minneapolis, St. Paul and Duluth-Superior; (3) mills of Buffalo, N.Y. Production computed on the basis of 72% flour production.

	Southwest* Weekly production	Southwest* Crop year to date	Northwest* Weekly production	Northwest* Crop year to date	Buffalo† Weekly production	Buffalo† Crop year to date	Combined** Weekly production	Combined** Crop yr. to date
Nov. 3-9	27,706	490,649	13,524	260,139	10,923	204,375	$2,153	955,163
Previous week	$29,314		$14,653		9,966		$53,933	
Two weeks ago	28,844		14,316		10,583		53,743	
1956	28,299	497,156	14,077	264,340	11,362	208,474	53,738	969,970
1955	25,643	488,609	13,825	262,336	11,451	151,782	50,919	902,727
1954	24,966	480,917	14,172	263,110	12,100	203,586	51,238	947,613
1953	25,406	470,527	16,288	280,704	11,403	197,331	53,097	948,562

*Principal mills. **74% of total capacity. †All mills. $Revised.

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Farm Commodity-Feed Price Ratios

	U.S.	New Eng.	Mid-Atl.	East North Cent.	West North Cent.	South Atl.	East South Cent.	West South Cent.	Mount.	Pac.
CHICKEN-FEED—										
Farm Chickens:										
October, 1957	3.8	3.7	4.7	3.9	3.6	4.2	4.2	3.7	4.3	3.3
September, 1957	4.0	3.8	4.8	4.2	3.8	4.3	4.1	3.7	4.4	3.5
October, 1956	3.7	3.3	4.4	4.1	3.3	4.6	4.5	3.8	4.7	3.3
Average (1946-55)	6.3									
Average (Oct., 1946-55)	6.0									
Broilers:										
October, 1957	3.6	3.7	4.6	3.9	3.7	3.5	3.4	3.4	4.1	3.7
September, 1957	3.8	4.1	4.8	4.5	3.7	3.6	3.6	3.5	4.3	4.5
October, 1956	3.5	3.5	4.2	3.8	3.8	3.4	3.5	3.5	4.5	3.7
TURKEY-FEED:										
October, 1957	6.6	8.3	8.9	7.0	7.7	6.2	7.1	6.5	6.2	5.4
September, 1957	6.7	8.5	9.1	6.9	7.8	6.0	7.2	6.5	6.2	5.6
October, 1956	7.3	7.8	9.1	7.7	8.3	6.8	8.1	6.8	7.0	6.3
Average (1946-55)	8.9									
Average (Oct., 1946-55)	9.0									
EGG-FEED:										
October, 1957	12.8	13.7	14.6	12.9	12.3	12.9	13.0	12.4	12.8	10.6
September, 1957	11.7	13.7	12.7	11.4	10.8	12.1	11.6	11.5	12.1	9.8
October, 1956	10.8	11.8	12.2	10.7	9.5	12.0	12.0	10.6	11.0	9.7
Average (1946-55)	11.2									
Average (Oct., 1946-55)	12.9									

	U.S.	North Atl.	East North Cent.	West North Cent.	South Atl.	South Cent.	West
MILK-FEED:							
October, 1957	1.52	1.58	1.46	1.57	1.66	1.60	1.46
September, 1957	1.44	1.50	1.37	1.50	1.58	1.51	1.42
October, 1956	1.47	1.47	1.42	1.50	1.66	1.62	1.40
Average (1946-55)	1.26						
Average (Oct., 1946-55)	1.39						
BUTTERFAT-FEED:							
October, 1957	23.2	...	19.9	25.7	...	15.9	18.9
September, 1957	22.9	...	19.6	25.4	...	15.6	18.7
October, 1956	22.4	...	19.8	24.7	...	15.6	18.7
Average (1946-55)	22.3						
Average (Oct., 1946-55)	23.1						

HOG-CORN:	U.S.	North Cent.
October, 1957	15.9	16.6
September, 1957	16.6	17.3
October, 1956	13.0	13.2
Average (1946-55)	13.4	13.7
Average (Oct., 1946-55)	13.9	14.2

NOTE: Ratios computed at mid-month by U.S. Department of Agriculture. Ratios represent number of pounds of poultry feed equal in value to 1 lb. live farm chicken, turkey or 1 doz. eggs; pounds broiler growing mash equal to 1 lb. broiler; pounds concentrate rations equal to 1 lb. milk or butterfat; bushels of corn equal to 100 lb. hog. Increases in ratios are favorable to the feeder.

KEY TO GEOGRAPHICAL DIVISION

Here is a guide to the states included in the geographical divisions listed in the accompanying commodity-feed price ratios:

New England: Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut.

Mid-Atlantic: New York, New Jersey, Pennsylvania.

North Atlantic: New England and Mid-Atlantic states combined.

East North Central: Ohio, Indiana, Illinois, Michigan, Wisconsin.

West North Central: Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas.

North Central: Combination of the two foregoing.

South Atlantic: Delaware, Maryland, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida.

East South Central: Kentucky, Tennessee, Alabama, Mississippi.

West South Central: Arkansas, Louisiana, Oklahoma, Texas.

Pacific: Washington, Oregon, California.

Mountain: Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Montana.

West: Combination of the two above.

South Central: Combination of the two above.

hatched from October to January.

The October to January hatch produced smaller eggs. Only 76% of the eggs weighed over 23 oz. per dozen as compared to 91% of the eggs reaching the 23-oz. mark from chicks hatched the remaining months of the year.

The study concluded that if a price of 80¢ doz. hatching eggs was necessary for profit from normal February to May-hatched chicks that $1.18 doz., or 48% more, would be needed for hatching eggs produced from October to January-hatched chicks to be equally profitable.

Meat-strain New Hampshires hatched each month of the year were used in the Delaware study.

A Missouri project on egg-strain birds using February, June, and September hatches shows annual hen-day egg production of 230, 219 and 207 eggs respectively. Culling rate was higher in the June and September hatches and egg size averaged lowest with the September hatch. There was no difference in mortality rate, Mr. Kinder said.

SWINE NUTRITION—Dr. R. W. Luecke, Michigan State University, reviewed work with controlling parakeratosis in swine through the use of zinc in the ration. The presence of small quantities of zinc in swine rations has proven to be effective in preventing outbreaks of the disease, he said.

The increased incidence of the disease in recent years, he said, is probably due to the trend toward substitution of plant proteins for animal proteins, the use of mineral products other than bone meal and the switch from free-choice feeding of supplement and grain to the feeding of complete feeds. The animal proteins contain more zinc than their replacements and the use of a complete feed tends to provide an excess of calcium.

In work at Michigan, a ration with 1.25% calcium produced poor growth and a high incidence of parakeratosis unless zinc was added at levels of 50 to 100 ppm., Dr. Luecke noted. In some cases, even this amount of zinc didn't completely restore growth and feed efficiency to normal.

Attempts to make supplements provide good nutrition for pigs over a wide range of body weights may not prove practical, he told the feed men. Certainly, there's no available experimental evidence which justifies the use of over 0.75% calcium in a complete feed.

Dr. Luecke said it was his opinion that it would be desirable if all pigs were fed a completely manufactured ration until they weighed 60 to 70 lb. Swine feed formulators know it's easiest to feed hogs when they get up to 70 lb. if they have been fed correctly at the start.

This would be particularly true, he said, when the supplement will likely be fed to pigs ranging from 15 to 100 lb. in body weight.

Feed manufacturers now have a very practical new tool in zinc compounds, such as zinc sulfate, zinc carbonate, or zinc oxide, that will help make feeds not only produce better growth but also increase feed efficiency, he concluded.

OTHER REPORTS—Modern technology in the livestock feeding industry has made it practical for white corn varieties to regain the popularity they once had with farmers, Dr. Laura M. Flynn, University of Missouri agricultural chemist, said.

In present feeding practices, livestock feeders supplement corn routinely with other feeds as sources of protein and vitamins, she said. Little white corn has been used in livestock feeds since the vitamin A value of yellow corn was recognized 30 years ago, Dr. Flynn noted. This is true even though most white corn varieties have a 5 to 15% greater yield than yellow varieties of the same maturity.

Commercial vitamin A supplements now on the market can easily and cheaply make white corn equal or better than yellow corn as livestock feed.

According to Dr. M. S. Zuber, university plant breeder who assisted Dr. Flynn in the preparation of this paper, many factors, such as time of harvest of silage and length of storage of grain, can influence the vitamin A content of yellow corn.

Most yellow corn fed livestock contains 1½ mg. or less of vitamin A per pound at the time of feeding, Dr. Flynn pointed out. This amount of vitamin A is available in ⅓ lb. of alfalfa silage or lespedeza hay; ⅛ lb. fresh alfalfa hay, red clover hay, or good corn silage; ½ lb. stored alfalfa hay; or ⅔ lb. ladino clover hay.

Vitamin A Cost

Commercial concentrates containing cod liver oil or another source of vitamin A can also be used, she said. The amount of vitamin A in a bushel of yellow corn can be purchased as a concentrate for about 3¢.

"If white corn is fed it may sometimes be necessary to provide vitamin A in addition to that in the roughage or concentrate," she said. "This would be true for cattle fattened in dry lot with limited amounts of hay, for animals getting poor-quality roughage or that stored a long time, for early lambs on creep rations, for very young pigs and for animals getting today's commercial supplements formulated to be fed with yellow corn."

The vitamin A requirements in poultry nutrition can also be met by sources other than yellow corn. However, according to Dr. Flynn, only certain substitutes will provide the carotinoids needed to produce the yellow pigmentation desired in the yolks of eggs and the skin and body fat of poultry.

Experimental work has shown that alfalfa leaf meal, used at a 5 to 10% level, is the best known substitute for yellow corn in getting good pigmentation in broilers fed a white corn ration. However, Dr. Flynn noted that alfalfa meal wasn't completely satisfactory as a vitamin A substitute in that instance.

Efficiency Limits

Despite such discoveries as antibiotics and stilbestrol, it's evident that there's a ceiling on the efficiency of production in farm animals that can't be exceeded by good nutrition and management, according to Dr. John F. Lasley, University of Missouri animal breeding specialist.

This ceiling is set by the inheritance of the individual and can't be lifted except through the application of improved breeding and selection practices, he continued. Individual variation in economic traits, such as rate of gain, milk production, and carcass quality, is the raw material with which the animal breeder works. The tools available for molding superior animals are selection, inbreeding, and crossbreeding.

According to Dr. Lasley, genetic variations are transmitted from one generation to another. In the past, it was thought that variations due to the joint action of heredity and environment weren't too important but geneticists aren't so sure now that this is true.

Studies are currently being planned at several experiment stations to determine the importance of the joint action of heredity and environment in the selection of farm animals. If this joint action is important, breeders need to be more certain than ever that the stock used for breeding purposes is selected under the same conditions under which their offspring will be grown and fattened.

Problems with milo storage and handling were discussed by Don B. Brooker, agricultural engineering department. Mr. Brooker presented data to show how milo can be stored and its moisture reduced by running air through it on days of low humidity.

Presiding at various sessions and making short presentations were the following: Dr. Elmer Ellis, president of the University of Missouri; Dr. A. J. Dyer, chairman of the animal husbandry department; Victor M. Gray, director of the feed division, Missouri State Department of Agriculture; S. R. Morrow, Morrow Milling Co., Carthage, Mo.; D. A. Meinershagen, secretary, Missouri Grain & Feed Dealers Assn., Higginsville, Mo., and Lloyd S. Larson, executive vice president of the Midwest Feed Manufacturers Assn., Kansas City.

Toastmaster at the banquet was Dr. W. H. Pfander, animal husbandry department, chairman of the conference.

In a short talk at the banquet, Oscar Straube, chairman of the board of the American Feed Manufacturers Assn. and president of Pay Way Feed Mills, Inc., Kansas City, reminded feed men of the importance of the mechanics of making feed, cited the fact that pelleted feeds have been shown to be better than unpelleted feeds. "More research is needed to determine why processing improves feed and how we can make these processing methods even better," he said.

A question and answer session concluded the banquet.

At the luncheon the following day, Dr. E. M. Funk, chairman of the department of poultry science, presided.

MARKETS

(Continued from page 2)

done by the feed trade of feed ingredients and most observers feel that with the first real cold snap feed business in the territory will be given a decided boost.

Citrus pulp production was expected to pick up in the immediate future and some tightness in the supply situation was expected to be relieved.

Soybeans in the territory have been moving well during the past few days to the crushing operators as well as to the export trade. As a result of feed movement there has been some activity by southeastern soybean crushers this week in selling soybean meal for forward delivery.

Local corn continued to move well, particularly shell corn, while ground snap corn seemed to be lagging and supplies were reported to be building up at some points. Supplies of ground cobs and shucks were readily available for roughage feeding. The weather was on the cool side for most of the week, with no real cold weather having been experienced.

South Central

With few exceptions, mills reported that their feed business was improving right along. There was nothing startling in the rate of increase, just the usual seasonal pick-up. The entire line of feeds shared in the better demand, possibly hog feeds were moving better than others, and poultry and cattle feed deliveries had a nice gain.

Veterans Day cut into the week's deliveries somewhat, but the loadings on Nov. 12-13 were larger than usual so, by the weekend, the loss by shutting down was expected to be overcome.

There were some rainy days followed by several days of sunshine with not enough drying weather to dry up the corn. Possibly being unable to work their crops has encouraged farmers to look over their formula feed supplies and replenish as needed.

Price lists have shown very little change during the past three weeks.

Pacific Northwest

Pacific Northwest feed mixers last week managed to maintain their over-all sales volume despite the recent decline in turkey and broiler feed transactions. There continued to be a good movement of egg mashes and a slight improvement in dairy feed sales since fall pasture conditions declined following heavy rains and the lack of sunshine.

There was little change noted in prices quoted feed mixers for ingre-

dients. The general tone of the feed market at Oregon and Washington terminals was slow with the demand limited to immediate needs of feeders and manufacturers.

Combined supplies of all feeds were large and producers reportedly were using home grown grains and forage crops extensively.

Prices for animal protein feeds averaged lower with a $2.50 a ton decline for meat and bone meal. Slight declines were posted for feed barley and corn.

Pacific Northwest wheat millfeed trading continued slow, but prices held unchanged. Oregon and Washington production was unchanged from the previous week at 5,700 tons.

Producer paying prices for eggs were adjusted at both Portland and Seattle with AA large listings taking a 1¢ doz. cut while A grade mediums advanced 1¢ doz. and A smalls were priced 2 to 4¢ doz. higher.

Portland dealers on Nov. 13 paid producers a 42-45½¢ doz. range for AA large eggs with A grade large at 40-43½¢; A grade mediums at 35-39½¢ and A small at 27-34½¢.

The turkey market advanced 1¢ lb. on hens and toms and Portland dealers quoted A grade young hens at 28¢ lb., net to growers on an eviscerated basis and A grade young toms were listed at 23-24¢ on the same basis with most sales at the outside price.

Frying chickens were in smaller supply and dealers advanced producer paying prices by 1¢ at Portland, making it 19¢ for No. 1 birds.

Central States

The formula feed business was just so-so in the week ending Nov. 13, with little change from the last several weeks in evidence.

Production was cut during the period by the holiday Nov. 11, and some firms said they would have had difficulty finding running time anyway. They pointed out that orders were somewhat harder to get than they were about this time last year, with the condition even more apparent for the last few weeks.

A number of reasons for the slowdown were mentioned, but generally they added up to indicate that the feed industry is not too different from several others right now which are experiencing the fact that the bloom is off the economy. Low returns by feeders in some cases, plentifulness of feeds other than prepared mixes, and a number of other factors are listed as responsible for soggy conditions.

On the other hand, no one is complaining too much, and most manufacturers seem to believe they will come out near 1957 in total volume of feeds sold.

Mountain States

The formula feed business continued to move rather slowly. An abundance of feed grains feed has curbed formula feed sales, some observers thought. Turkey feed sales have dropped off as turkeys go to market.

Feed lots are filling up slowly as feeder prices remain high. The milo harvest is keeping farmers busy at the present time. There will probably be more cattle moving into farm feed lots as soon as the farmers have the harvest out of the way and take inventory of their feed supplies.

Broiler and egg prices were more favorable than they have been and feed sales in this direction were brighter.

Generally, feed sales were below the average for this time of the year, but most dealers seemed optimistic about the near future.

Ohio Valley

Continuing cold weather, with temperatures in the low 20's, served to maintain sales of formula feeds in high tonnages this week in the Ohio Valley, and manufacturers were anticipating a better volume during the winter ahead than for many past seasons. It is generally believed that any general economic recession will be only a "sidewise" movement in this area, and quite unlikely to reach proportions that will depress the market for eggs and meats to any extent.

This belief is substantiated by the continuing maintenance of active buying at area stockyards and wholesale markets at steady to slightly higher prices this week. With the holiday season ahead, it is to be expected that retail activities will be maintained through the remainder of the year.

Manufacturers say the current ingredient situation is quite satisfactory, with adequate supplies of most items readily available at steady prices, thus making it possible to maintain production schedules on an even keel.

The current upswing in volume has made it necessary for retailers to stock greater varieties of formula feeds in much larger tonnages than during recent months. This has resulted in increased working forces in area plants, and several this week reported employment of third shifts, and even weekend overtime in some mills.

Northeast

There wasn't much change in formula feed demand from last week and the fairly good tonnage turnover was expected to continue next week. The first signs of a seasonal upturn appeared, but the strength of a further rise will depend a lot on the weather.

Dairy feeds moved well. A good percentage of it was in feeds to mix with grains on the farm. A fairly good run of dairy feeds is likely in December but not too much is expected of poultry feeds until January, according to feed men.

Egg mashes were well taken but the egg market has become unsettled. Broiler feeds and turkey feeds just tagged along. Broilers were steady in New York and turkeys were higher.

Grain prices were little changed during the week. Offerings were light because farmers were having some difficulty in getting their crops under cover.

Soybeans were $1 ton higher in a steady protein market. Linseed oil meal, cottonseed oil meal and gluten meal were unchanged.

Animal fats were quite strong and up ¼¢. Meat meal was weak and off $2, but fish meal was firm and unchanged.

Hominy was hard to find but prices were off 50¢. Brewers' dried grains were up $1 ton.

The millfeed demand was very dull and the lack of demand came in the face of a pick up in some mixers business. One spokesman said, "They're just not going for millfeeds this year because there is too much other grain around." He added that the "East is jammed with oats and the central west is packed with corn."

The running time of formula feed manufacturers held steady at 40 hours.

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Alfalfa Nutrition

Formulation of Feeds for Feeder Cattle

IN a talk given by Dr. J. H. Bridges before the 1957 Texas Nutrition Conference, it was brought out that in formulating a ration for feeder steers (or any class of ruminants) certain nutritional limitations must be recognized. Nutritionists recognize that much is yet to be learned in ruminant nutrition, but there are a few basic fundamentals that certainly should be followed in formulating a ration.

One of the basic fundamentals . . . . . .

Protein—Basic research has shown that protein has a satiety value, as well as increasing the digestibility of other constituents of the ration. Every cell in the animal body contains protein. Thus, a protein source should be fed daily. Growing-fattening beef cattle need approximately 12% crude protein, of which 65% to 70% should be digestible. Quality protein (amino acid balance) is undoubtedly an important consideration in the diets of ruminants and rumen micro-organisms, especially under stress conditions. It might well be that some of these so-called unknown factors are balanced amino acid. Alfalfa proteins (alfalfa leaf meal) are, next to meat protein, one of the high quality proteins. *No qualified nutritionist would feed ruminants (and probably monogastric animals) a ration void of alfalfa.*

From the foregoing, it is evident that high quality protein plays a vital role in ruminant nutrition. One of nature's best sources of this vital nutrient is dehydrated alfalfa. In developing your rumen feed formulas, be sure to include adequate amounts of National Dehydrated Alfalfa to insure top feed performance.

BRIDGES, JIMMIE H.—*"Formulation of Feed for Feeder Cattle—New Developments"—page 68, abstracts of papers presented at the Texas Nutrition Conference, October 2, 3, 4, 1957, College Station, Texas.*

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